

**STUDYING THE EFFECTIVENESS OF A COMMUNITY COLLEGE
ADVISING INTERVENTION MODEL FOR UNDECIDED STUDENTS**

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Studies

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Nationally, community college rates of student completion and success are in the spotlight, and college leaders are increasingly focusing on academic advising as a strategy to meet institutional goals for improvement. Research on academic advising as a lever for improved student outcomes is compelling, but applying research-based strategies to local practice can be challenging. This research study discusses the development of an academic advising intervention model for undecided students within a small, rural community college, and the implementation of this model using improvement science-based strategies over an academic term. To assess the effectiveness of the model, quantitative data on student engagement, behaviors and outcomes, and qualitative data on the implementation process were collected and analyzed. The research methodology incorporated in this study utilizes both a causal comparative design to evaluate differences in quantitative data between the study and a comparison cohort, and thematic analysis to explore the implementation process and impacts. Major findings are that (1) the adoption of the advising model did have significant positive impacts on student engagement and student behaviors, and positive impacts on student outcomes and (2) the iterative design strategies utilized throughout the implementation had a positive influence on the adoption of the model. The study provides an example of the application of

community college advising theory to local practice, the management and evolution of a change initiative through iterative design, and the assessment of a local advising model using readily available data. The study and results have implications for academic advising administration and for educational leadership more broadly.

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1.0 INTRODUCTION TO THE PROBLEM OF PRACTICE

Change is difficult. The current system pulls innovative changes toward more familiar ground like a giant magnet. What begins as a large change can result in only a small adjustment. (Langley, Moen, Nolan, Nolan, Norman and Provost, 2009, p. 93)

The quotation above from Langley, et al's, *The Improvement Guide: A Practical Approach to Enhancing Organizational Performance*, provides a useful anecdote to portray the challenges ahead for America's community colleges. In 2009, President Barack Obama outlined a national imperative for an increase in the number of college graduates, and in doing so, challenged the higher education community to improve their accessibility to an increasing number of students, and to simultaneously improve student outcomes (U.S. White House, 2009). While this challenge was directed at higher education at large, community colleges are central to any national efforts to increase access and outcomes. This sector is often noted for its impressive efforts to provide open access to post-secondary education through low costs and convenient locations (see Goldrick-Rab, 2010), but is likewise often noted for its low rates of student success and completion (see NCES, 2015).

As of 2014, community colleges enrolled over 6 million students, representing roughly 43% of the population engaged in public higher education (NSCRC, 2014). However, while these enrollments represent a large share of the nation's college going population, the educational attainment rates for students who begin in this sector raise significant alarm. By

national Integrated Postsecondary Education Data System (IPEDS) reporting standards, only 20% of community college students will go on to complete a credential at the college they begin at (NCES, 2015). Focus has been placed on these dismal completion rates within community colleges and across the country, calls for action and reform have come in many different forms. In an effort to respond to this call to action, a growing body of literature on student retention, completion and success at community colleges is emerging, and with it, the development of strategies for institutional reform. Of late, perhaps the most prominent of these strategies is referred to as “guided pathways” (Bailey, Jaggars, and Jenkins, 2015). In their book, *Redesigning America’s Community Colleges: A Clearer Path to Student Success*, Bailey, et al (2015) argue that community colleges are systematically failing to meet the needs of the students that they enroll, and that only broad-based reform will be sufficient to raise student outcomes to an acceptable national level. In response to the national calls for improved outcomes, Bailey, et al argue that community colleges must both acknowledge the clear needs of their diverse body of students, and must more systematically align their structures and supports to meet these needs.

1.1 COMMUNITY COLLEGE STUDENT RETENTION

Propelling students passed the finish line of a college credential is what matters most in terms of a student’s long-term benefits from post-secondary attendance (Belfield and Bailey, 2011; Habley, Bloom and Robbins, 2012). However, in light of such disparaging rates of college completion, shorter term measures of student success are necessary to inform student progress challenges (Goldrick-Rab, 2010; Mullin, 2012). As such, college retention strategies have been

a major focus of research for decades, and important theoretical concepts have emerged. Specific to this study, the literature asserts that the characteristics of the student body and the institutional structures of community colleges themselves are both important factors in understanding why students depart before earning an academic credential (Bailey, Jaggars and Jenkins, 2015).

1.1.1 Student factors

Studies on college student retention consistently connect the pre-enrollment characteristics of students with early departure from college (Adelman, 2005; Fike and Fike, 2008; Habley, et al, 2012; Kuh, 2008; Porchea, Allen, Robbins and Phelps, 2010). Consistent community college policies supporting open access and affordability encourage the enrollment of a student body that is more diverse than any other sector of higher education (AACC, 2015). When compared against students attending four year institutions, students who enroll at community colleges are on average less academically prepared, older and more likely to enroll part time; represent greater proportions of students from low socioeconomic backgrounds and underrepresented racial and ethnic groups; and are more likely to be the first person in their family to attend college (Mullin, 2012). These students select community colleges for a variety of reasons, but predominately do so because of their open access, low costs, and convenient locations (Goldrick-Rab, 2010). Open access policies encourage students who might not be (or feel) qualified to enroll at more selective institutions, low cost encourages the enrollment of low income students, and accessible locations supports a population that largely commutes to campus and that enrolls part time (Somers, et al, 2006). Each of these precollege characteristics that are common among community college students are also variables that are highly correlated with student attrition (Porchea, et al, 2012) suggesting that by demographic

factors alone, community college students are an “at risk” group.

George Kuh (2008) highlights the “eight risk factors that threaten college persistence and graduation” (p. 69), listing academic preparation, delayed entry after high school, part time enrollment, working 30 + hours per week, and being a first generation college student as important factors. In addition, being financially independent, a single parent or caring for children at home are also listed as high risk factors for college students. Reviewing this list and the characterizations typical of community college students, Adelman (2005) extends this retention research by establishing a strong link between these student demographic factors and poor rates of community college student retention and completion.

1.1.2 Academic and career decisions

Specific to the community college population, there exists a prevailing perspective that the majority of students enrolling in this sector are undecided in some form or another, and that this indecision could be a possible contributor to such high rates of attrition (see Grubb, 2006; Jenkins and Cho, 2012; Karp, 2013). Grubb (2006) asserts that community college conditions of open access, low costs and convenient options are particularly favorable for “experimenting” students who are struggling to make connections between academics and their longer term career aspirations, resulting in high percentages of undecided students at community colleges. Karp (2013) also asserts that students who are uncertain of their academic major are overrepresented at community colleges, suggesting that both those students who enroll with undecided intention and the larger community college student body might predominately struggle to make informed decisions about their academic, career or life goals. This indecision can ultimately result in poor academic choices which can delay time to a degree, waste time, energy and funding, and in the

worst cases, disengage students from their educational experience altogether (Goldrick-Rab, 2010; Jenkins and Cho, 2012).

Compounding the challenge, the pre-college characteristics of community college students also suggests that these students might not have sufficient academic, social, cultural and economic resources to effectively make decisions in the academic environment without significant support (Goldrick-Rab, 2010; Jenkins and Cho, 2012). Bourdieu (1986) describes this social, cultural and economic capital a set of resources that are highly stratified in American society, creating a decidedly unequal playing field for those from lower socioeconomic statuses, non-majority racial and ethnic groups or first generation students. Particularly in the academic setting, this suggests that community colleges students might predominantly lack the types of experiences, connections and resources that could help them to develop meaningful academic and career goals, and that this lack of direction might even act as a barrier to successful completion or transfer.

1.1.3 Student engagement

One of the most important concepts in student retention is student engagement in the campus community (Kuh, et al, 2005; Pascarella and Terenzini, 1991, 2005; Tinto; 1993), which suggests that the more engaged a student is in their educational experience, the more likely that they will persist towards a credential, a concept that is relatively undisputed in retention literature. For community college students, engagement with campus resources and programs might then serve to both enhance their overall campus experience and assist them in moving toward the development of academic and career goals. However, on community college campuses, students' situational factors play a detrimental role in a their ability to

engage on campus (Porchea, et al; 2010; Golrick-Rab, 2010). Community college students are more likely than four year peers to commute to campus, to enroll part time, to be employed, and to be supporting dependents than their four year counterparts (Mullin, 2012). Each of these factors is independently correlated with higher rates of student attrition (Porchea, et al, 2010), and each also creates logical barriers to student engagement on campus as a result of competing external commitments. Community college students, and even commuter students at large, are often categorized as a group of students who arrive on campus to attend class, but who then leaves campus entirely once their classes are complete (Habley, et al, 2012). Thus, particularly for students who are struggling to define academic and career goals, and who might most need to engage with campus resources, these competing commitments suggest challenges with any interventions that are optional and that are not embedded into the regular classroom experience.

As long as such a strong link persists between student characteristics and discouraging outcomes, it could be argued that community colleges that retain such a clear commitment to open access are obligated to exceed efforts by their 4 year peers to fully support the needs of their students throughout the course of their educational experiences. Yet, recent research focused on the community college context suggests that institutions, in practice, are doing just the opposite. In response to continually declining availability of funds and constant pressures to control costs, community college support structures are often both poorly funded and understaffed, resulting in services that differ significantly from the ideal (Karp, 2013).

1.1.4 Institutional factors

In addition, then, to the challenge correlated with the type of student that predominantly enrolls at community colleges, literature has also suggested that these institutions themselves

can also unintentionally create conditions that are unfavorable to student success. Community college students face an enormous amount of choices within their early enrollment experiences; choices they are often underprepared to effectively engage with (Goldrick-Rab, 2010; Scott-Clayton, 2011). Jenkins and Cho (2012) suggest that it can be the community college mission to be “all things to all students” which can create a complex and confusing enrollment space for entering students, leaving those with unclear or uncertain academic and career goals particularly vulnerable to early departure. In addition to challenges in the enrollment process alone, Bailey, Jaggars and Jenkins (2015) refer to the early community college experience through the concept of the “cafeteria college” (p.13), citing the wide variety of choices and options available to students in program design and delivery, intake and support services offered, and complex college readiness requirements. They suggest that while these challenging decision points loom for student underprepared to effectively undertake them, community colleges are notorious for making the resources to support this decision making (particularly advising resources) optional and difficult to access.

Dougherty (1994) suggests that the community college struggle to increase outcomes stems directly from the comprehensive mission of these colleges. This mission can stretch institutions to attempt to be everything for everyone, and requires then that they meet the myriad needs of the student body that they enroll. These high aspirations, coupled with an extraordinarily diverse student body and marginal budgets, provide a challenge that Dougherty asserts colleges are not doing well to meet. He suggests that this comprehensive mission is not reinforced with a level of funding that could reasonably provide the adequate support for all of the populations community colleges attempt to serve.

In addition, Jenkins and Cho (2012) further supports this assertion, and suggests that as

a result of their low funding threshold, community colleges often also provide both poor educational pathways and inadequate guidance through completion. Their research found that while community colleges are encouraging diverse enrollment through open access policies, these institutions offer a complex and confusing array of options which underprepared student often struggle to successfully navigate. This includes a lack of clear degree pathways themselves, as well as a lack of clear avenues for successful transfer to four-year colleges and universities. While the former impacts completion at the community college level, the latter (transfer impact) also has significant effects on student's abilities to meet their intended aspirations. Further highlighting this dichotomy of access and support, Schudde and Goldrick-Rab (2015) offer a more resounding premise, suggesting that because of a lack of effective support "community colleges are thus portrayed as a contested site in which inequality is simultaneously ameliorated by increasing educational opportunity and exacerbated by failing to improve equity in college completion across key demographics, such as race and socioeconomic status." (p.27).

While no singular effort will bring closure to the community college retention and completion challenge, this evidence specifically draws attention to the needs of students who enter community colleges with unclear academic and career goals, and suggests that large proportions of the student body might be struggling to define such goals. In addition, this illustrates the potentially negative influences that community college environments might have on these students, providing clear opportunities for institutional action.

1.2 SUPPORTING RETENTION THROUGH IMPROVED ADVISING

While many templates for improvement can be drawn from the literature, in direct response to the conditions outlined above, significant attention has been given to the importance of the academic and career advising services that are made available to students. Bailey, et al (2015) specifically highlight advising reform one of the key strategies for making institutional shifts towards a more student success centered orientation. In their extensive research to outline key strategies that impact community college student persistence and completion, Karp and Stacey (2013a) make a case that substantial change in community college advising is an institutional imperative for student success. Kuh (2008) outlines the importance of students' experiences with academic advising as significantly connected to their overall college experience, and Habley, Bloom and Robbins (2012) point to development in academic advising as a viable and essential campus initiative to promote student retention and success.

This message to improve academic advising is quite clear, but the path towards sustained change in academic advising can be decidedly less transparent. Improving academic advising programs at community colleges can involve complex staffing and budgetary issues, the integration of services and technology, and even cultural reform in order to make an impact on student success (see Bailey, et al, 2015 & Gordon, Habley, Grites and Associates, 2008). Yet, even facing these complex challenges Karp, Kalamkarian, Klempin, and Fletcher (2016) identify that many institutions are increasingly turning to academic and career planning reform as a strategy to impact student success. Karp, et al point to the potential of these type of initiatives to realign institutional practices and cultures around specific needs of community college students, and specifically refer to these reforms as Integrated Planning and Advising for Student Success (iPASS). Increasing focus has been placed on these strategies, on

frameworks for adoption, and on the importance of local context when considering iPASS type reforms (Tyton Partners, 2016a).

At the local level, institutional leaders and, in particular, academic advising administrators are responsible for both the formulation and execution of feasible plans to reform advising systems to better support student success. The evidence that current, typical advising practices within community colleges can hinder student success is compelling, as is the evidence that reforms in this area can indeed have an impact on desired student outcomes (Bailey, et al, 2015). Implementation guides for iPASS like those presented by Karp, et al (2016) and Tyton Partners (2016a; 2016b) provide an outstanding framework for local action, but they all acknowledge the significance of local context within the adoption of these strategies. Understanding and responding within the local context of an individual institution then becomes the primary challenge of local practitioners seeking to advance their institution through the adoption of academic advising reforms.

1.3 LOCAL PROBLEM OF PRACTICE CONTEXT

Butler County Community College began its operations over 50 years ago with a primary emphasis on serving the educational needs of the local county. Over the last decade, the college has expanded in mission to serve a larger geographic region, with satellite locations extending into four additional counties. BC3 offers over 50 associates degrees and certificates to roughly 5,300 credit students each year, and serves as a hub for non-credit training and community education, enrolling over 15,000 students each year in these opportunities. BC3 serves primarily suburban and rural communities, and serves a predominantly White

population. (About BC3, 2016).

Current statistics reported to the Integrated Postsecondary Education Data System (IPEDS) detail cohort graduation rates at 20% and first year retention rates at 62% (IPEDS, 2016a). Both of these rates, when compared to national graduation rates of 20% and retention rates of 58% (NCES, 2015) suggest that the college falls quite near this national average. State level data portray the college as a leader in students' rates of successful transfer for baccalaureate institutions, which points to an important contextual factor. Roughly 75% of students who enroll at the college express an intention to eventually earn a Bachelor's degree, signifying successful transfer as an important student outcome. While only 20% of students complete a degree at the college, 35% successfully transfer to another institution (IPEDS, 2016a). While these rates of transfer represent some good news, the broader challenge of student retention and completion remains, and the college has identified academic advising as a possible strategy for improving student retention and success, and notes this commitment in its strategic plan (BC3 Strategic Plan, 2012).

As the individual directly responsible for the advising program at BC3, my professional work is ideally situated within this larger problem of practice, and is integral to any meaningful advising reform on campus. This broader problem of practice for community colleges at-large then can be narrowed significantly in focus to a local institution's efforts to take on the challenge of revising its advising activities for students, and to begin the work of leveraging this advising reform to move the needle on student success.

1.3.1 Local challenges

Drawing from the literature on student retention and completion, BC3 has engaged in a variety of institution-level activities in recent years to begin to identify the types of local strategies that may have the greatest impact on its student population. The college has recognized the need for broad reform, and has articulated 7 areas of strategic focus for the upcoming strategic plan. Drawing from the national narrative described above regarding the need for transformative change in the delivery and function of academic advising programs, BC3 has specifically identified work in academic and career advising as one of the 7 key student success initiatives. Reviews of institutional and national benchmark data on academic and career advising and of current advising program practices all draw comparisons to the type of problematic context identified as detrimental to student success (Karp, 2013). Academic advising resources are limited, advisors are often unconnected with the students they are assigned to serve, and current technology is poorly integrated with goals for student academic and career planning. In addition, academic and career advising services are largely voluntary for students, and key advising and retention efforts are not sufficiently linked to maximize impact. Even for undecided students, a population served entirely by the professional advising team, no defined structure of support or guidance is being delivered in a way that is connecting with students. Finally, advising services are still highly dependent upon archaic, paper-based processes, creating significant barriers for both students and advisors in the effective delivery of quality advising experiences.

1.3.2 Response to the problem

In response to these local challenges, a variety of initiatives have previously been undertaken to streamline the new student advising experience, and to better prepare students to engage with advising technology and resources. In addition, more recently, efforts have been made to reorganize the central advising program staff and to purchase new advising and planning technology. As noted by Karp, et al (2016), the adoption of planning and advising technology can be utilized as a lever to change institutional culture and to shift toward a more student centered institutional orientation, yet, the adoption of these technologies in isolation is insufficient to motivate such change. Additionally, a review of current challenges faced by the advising program suggest that significant barriers exist even to the effective implementation of an already purchased student advising and planning product.

The college's team of professional advisors have been leaders in the implementation of a variety of initiatives that have led to meaningful changes, and play an important role in any efforts to adopt a new advising philosophy or structure. Yet, at present, advisor anecdote and institutional data alike suggest that one of the key challenges for this group is that they are disconnected with the advisees that they are assigned to serve. While the advising team sees a large share of the overall student population, they rarely connect with the same student or with their own assigned advisees, and current structures and practices discourage regular and consistent contacts.

These challenges echo those presented in research conducted by the Community College Research Center (CCRC), outlined in the work of Bailey, et al (2015), Jenkins and Cho (2012), Karp (2013) and others, and suggest that BC3 is not removed from the national narrative on poorly designed and delivered supports. In response to the types challenges found

at BC3 and typically found at other community colleges, Karp and Stacey (2013b) provide a summary of key strategies for improvement in advising program, and outline a need for programs to deliver sustained, strategic, intrusive and integrated, and personalized advising services (SSIP). Within this framework, one of the driving strategies is the need to develop a sense of sustained and personalized connections between advisor and advisee. For an advising program to begin to remediate the challenges described as typical of community college advising, one of the primary focuses of reform is the need to develop structures and practices which encourage and support student engagement with a consistent academic advisor.

1.3.3 Advising pilot program

The academic advising team committed to this challenge, and developed a pilot intervention for the Fall 2016 semester that was implemented with undecided students in an effort to begin the work of shifting towards a SSIP-informed approach. Based on the challenges presented in the literature on student retention, the principles of sustained, strategic, intrusive, integrated, and personalized advising became the primary “drivers” for sustained change in the overall advising program’s structure, function and expected outcomes for students (Dolle, Gomez, Russell and Bryk’s, 2013). Considering both the local needs of the community college advising program under review and the broader institutional context goals of organizational improvement, this pilot intervention kicked off the type of “action” needed to improve advising services and to align this program with institutional goals for student success. Yet, for this action to have any value as the beginnings of sustained institutional reform, understanding the impact of this program on intended outcomes is essential, as is the continued review and improvement of the change initiative itself. The problem of practice is then finally

refined to the study of how one institution undertook efforts to improve its advising program, the efficacy of that program design, and the associated impact of these improvements on intended outcomes.

1.4 SIGNIFICANCE OF THE STUDY

Practitioner research can be utilized to understand the effect of organizational change and to improve our own professional practice (Menter, Elliot, Hulme, Lewin and Lowden, 2011). This study is intended to accomplish both of these outcomes. As a community college leader, this study provided the type of evidence needed to expand a pilot project towards broader and more effective implementation in the larger campus community. As an academic advising administrator, this study tested the efficacy of a particular program strategy, yet did so while creating an environment which encouraged staff development and contributed to a culture of organizational improvement. As a practitioner deeply embedded in the work of this pilot and this associated study, this work also afforded meaningful opportunities for me to develop my own professional competencies as both an advising administrator, and perhaps more importantly, as an academic advisor who serves at the crux of the student experience at the college.

While this study was clearly aligned with goals for local organization and professional improvement, practitioner research also plays a role in contributing to the broader knowledge of our respective professional community (Menter, et al, 2011). In addition to the local value that was derived from this study and its outcomes, other community college practitioners can benefit from a review of the methods used to deliver a pilot program in advising and to assess its impact,

or from the iterative design utilized to enhance the pilot and the associated organizational learning. Finally, at its core, this study was the integration of theory and practice, and serves as a demonstration of how community college academic advising theories can be applied within local context. The subsequent evaluation and impact of this theory-to-practice model then provides meaningful feedback on the utility of the theoretical model for community college academic advising.

2.0 REVIEW OF SUPPORTING LITERATURE

The development of an academic advising intervention model, its integration within local context, and the ongoing evaluation of its implementation and effectiveness are all elements of this study which are informed by the growing body of literature on community college advising reform. The following literature review first more fully develops the current context for community college advising reform and explores models being proposed for adoption. Building from these broader models for change, more concrete advising strategies are highlighted for their relevance to local practice and to the undecided student population that is the target of this intervention model. In addition, this review outlines the positive outcomes associated with improved community college advising, and discusses evaluation strategies for studying the implementation and impact of advising interventions. Finally, a theory of action is developed to guide the advising intervention model serving as the focus of the dissertation in practice.

2.1 COMMUNITY COLLEGE ADVISING REFORM

In response to disparaging rates of student retention and completion, a growing movement for change is underway. National organizations such as Achieving the Dream and Complete College American (CCA, 2016), are focusing resources on informing this challenge and on generating solutions, while major philanthropic organizations such as the Lumina

Foundation, the Bill and Melinda Gates Foundation and the Kresge Foundation are diverting important financial resources to this initiative as well (Bailey, et al, 2015). In addition, research organizations such as the Community College Research Center (CCRC, 2016) has been focusing valuable expertise and resources on the community college completion challenge and the potential responses.

As a result of the increasing attention on this larger challenge, a growing body of literature is emerging, and with it, specific models for action. One of the most prominent of these models has been referred to as “guided pathways” (Bailey, et al, 2015), which advocates for systemic, transformational change to the institution and to its most core functions. This model for change places heavy emphasis on improvement in academic advising as a key lynchpin within these reform efforts, resulting in a similar growth in the literature specifically informing community college academic advising reform. Following is a review of guided pathways and academic advising’s role within this reform model, followed by a progression to models that place more explicit focus on efforts to improve community college academic advising programs.

2.1.1 Guided pathways

In the recent book, *Redesigning America’s Community Colleges: A Clearer Path to Student Success*, Bailey, et al (2015) develop an argument that even in relationship to their most consistent and basic practices, community colleges are poorly designed to support the success of the students that they aspire to serve. They build off of the notion that complex systems are often perfectly organized to achieve exactly the results that they get (Heifetz, Grashow, and Linsky, 2009), and suggest that it is this lack of alignment between student needs and the

college's structures and supports that is most responsible for the significant lag in outcomes prevalent within this sector of higher education. Bailey, et al specifically note that as a result of this condition, community colleges must fundamentally alter their most basic and core structures and practices if they hope to meet the national calls for increased accountability in outcomes.

In response to this diagnosis, Bailey et al (2015) outline a set of comprehensive institutional reform strategies that they theorize can assist colleges in more effectively supporting students, and that as a result, can improve student success. These reform strategies are developed with a foundational understanding that the diverse cohort of community college students needs specific and strategic supports to successfully engage in and benefit from higher education experiences. To support these students, Bailey, et al outline four key strategies that are essential to college efforts to reform: the restructuring of college academic programs, the improvement of guidance and support functions, an emphasis on improved instruction, and the adoption of more effective developmental education strategies for underprepared students. Specific to this literature review, the focus on guidance and support systems has led to increased emphasis on the role of academic advising programs in supporting college reform efforts.

As they articulate the key components of the guided pathways model, Bailey, et al (2015) stress the importance of the role that "guidance" plays for the typical community college student. They contend that community college support services are essential in keeping students engaged and on track to complete their credential, and explain that advising programs are well-positioned to provide the type of structured academic and career services that community college students need in order to find success. Emphasizing this important point, they suggest that "at community colleges, the academic advisor is the most important resource to help new students clarify their goals and select courses that lead towards those goals" (Bailey, et al, 2015, p. 58). To

dramatically change student outcomes, the guided pathways model proposes that colleges need to make efforts to increase in-person academic advising, to engage in academic advising as a teaching function, to sustain advising throughout a student's experience, and to enhance advising with integrated technologies.

In response to the prominence of guided pathways reforms, Karp (2013) explored the current conditions for academic and career planning support at community colleges, and found significant gaps between the ideal advising program articulated by guided pathways models and those typically found on campus. She found that community college advising was often represented through fragmented services and inconstant points of contact, with a focus on information sharing rather than on student learning. In addition, she found that services were often deployed only for new students, and were generally optional and challenging to access for students at-large. In response, Karp challenges community colleges to address these significant deficiencies, and articulates a need for advising programs to more constantly support the academic and career development of students. Specifically, Karp calls for advising that is driven by an integrated approach to academic and career advising, which offers intentional strategies for students to explore their interests, strengths and values.

2.1.2 SSIP approach

Building on these core concepts for improved advising, Karp extended her work to outline a more powerful form of advising for community colleges, developing a practitioner's guide to strategic advising in partnership with Georgia Stacey (Karp and Stacey, 2013a). In this guide, the authors further develop the need for academic advising reform, and propose a form of strategic advising that they contend can close the gaps between aspirational and realized

academic advising. Specifically, they outline an approach to advising that is strategic, sustained, intrusive and integrated, and personalized, which they coin as the “SSIP” approach (Karp and Stacey, 2013b, p. 3). They describe this ideal form of advising as follows:

Ideally, academic and career advising is a multiphase process that occurs over a prolonged period of time. College advisors integrate academic and career counseling by guiding students through an exploration of their strengths, skills, and interests, followed by a structured investigation into various occupations and careers that match these strengths, skills, and interests. Finally, advisors work with students to develop an academic plan that will help them progress toward the professional goals they have identified. (p. 1)

Within this more ideal form of advising, services are strategically delivered to students who are historically at risk, and who are most likely to benefit from them. Community college restrictive budgets suggest that advising programs are often not in the position to simply add more staff to take on this challenge, so this notion of strategic allocation of advising resources becomes an important concept for program design. Second, Karp and Stacey champion the need for an integration of academic and career advising and counseling activities. When effectively integrated, career advising strategies can serve as a valuable enhancement to traditional academic advising (Gordon, 2006). Third, the SSIP model defines the need for advising to be delivered through a developmental process that is reoccurring at peak times throughout a student’s academic career, and that supports students’ broader academic and personal growth. Finally, Karp and Stacey explain that this more ideal form of advising should incorporate technology appropriately to supplement and extend the work of academic advisors, and to effectively integrate other support services which can help advisors to identify at-risk students.

2.1.3 iPASS reforms

As colleges began to make efforts to improve their local advising practices, a new wave of advising technologies has been developed and deployed in an effort to support the academic and career planning needs of students (Tyton Partners, 2016a). Incorporating technology into academic advising programs is often noted in the literature as an effective strategy for improving academic advising, because of its potential to supplement the traditional academic advising experience at a reduced cost (Bailey, et al, 2015; Habley, et al, 2012; Leonard, 2008). While there is little evidence that incorporating advising technologies on their own has sustained impact on student success, a growing body of literature suggests that these technologies can be utilized as significant driver of larger-scale advising reform (Karp and Fletcher, 2014; Karp, et al, 2016; Tyson Partners, 2016b). As a result, technology has evolved as a significant motivator of advising reform, and continues to be a preferred vehicle for improved services. Recently, in fact, Complete College America announced that 30 two and four year colleges would launch a new, grant funded advising tool, *Purpose First*, to more effectively combine career and academic planning in an effort to spur on the types of institutional reform discussed above (CCA, 2016). The prominence of such efforts has earned these reforms a specific designation, and Karp, et al (2016) refer to these programs as integrated planning and advising for student success (iPASS) initiatives. This research extends beyond simply the forms of advising practice that might be impactful for community college students and more fully explores the institutional conditions, cultures and leadership necessary for such change. Drawing from broader theories of organizational change, this research on iPASS reform also distinctively explores the institutional conditions that either inhibit or encourage sustained change in academic advising programs, and

in larger institutional orientations toward student success (Karp, et al, 2016; Tyson Partners; 2016b).

Within the broader literature on academic advising reform, specific attention is given to both the changing practices within advising offices that might more effectively support the community college student, as well as the institutional structures and cultures which support (or impede) these efforts. Each of the frameworks for academic advising reform focus specifically on the community college context, and draw from the concept that academic advising, when done well, can have a positive impact of students and their long-term success in college. While these advising strategies and efforts provide broad concepts to consider, a more detailed look at the key concepts for this improved form of advising is necessary to more fully connect these frameworks to local opportunities for action.

2.2 STRATEGIES FOR IMPROVED ACADEMIC ADVISING

Countless specific strategies have been articulated in the literature that might help an institution to improve its advising services, but all must be considered within the specific context of an institution's current practice, existing structures and available resources. Yet, from these many strategies and through the frameworks articulated above, a variety of reoccurring themes do emerge which consistently are acknowledged for their impact on student success. Prominent strategies include incorporating a developmental approach to advising (Crookstone 1972, 1994, 2009; Grites, 2013; O'Banion 1972, 1994, 2009) and to develop more proactive or intrusive practices (Karp, 2013; Smith, 2007 and Varney, 2013). In addition, a growing body of literature champions the integration of career and academic advising services, (Bailey, et al, 2015; Gordon,

2006 & 2008; Habley, et al, 2012; Hughey, Nelson, Damminger and McCalla-Wriggins, 2009; & Karp, 2013). This research articulates the importance of helping students to develop a clear sense of purpose and commitment for being in college, and linking that with a concrete academic plan. At the community college level, this focus on integration can also extend beyond career advising to the services which support student transfer (Wyner, Dean, Jenkins and Fink, 2016). Finally, key themes emerge in the need to integrate services by linking advising with other retention supports (see Karp, 2013 & Habley, et al, 2012) and incorporating technology into advising (Karp, et al, 2016 & Tyton Partners, 2016). Each of these strategies is discussed in more detail as follows.

2.2.1 Developmental advising

According to Grites (2013), developmental advising “enables the academic advisor to take a holistic view of each student to maximize that student’s educational experiences in an effort to foster his or her current academic, personal and career goals toward future success” (p.45). Unpacking this detailed description highlights the importance of personalized contact and support that reflects the unique needs of the individual student. This model of advising has become one of the most prominent and widely regarded forms of advising (Grites, 2013), which draws on roots in the works of both Crookstone (1972;1994; and 2009) and O’Banion (1972;1994; and 2009). Both saw advising as an opportunity to influence broader student development by intentionally engaging students in a process which, over time, could contribute to their academic, personal and career development. In addition, developmental advising practice also set the foundation for an emerging view of advising as a teaching and learning

process, where advisors utilize intentional pedagogy to help students to meet targeted learning goals (Reynolds, 2013).

Grites (2013) asserts that developmental advising is not a theory itself, but is grounded in theories of student development and learning, and is rather a framework for effective advising practice. Karp (2013) specifically acknowledges the value of these developmental advising strategies for community college students, specifically citing the value of personalized and sustained advising experiences over the course of a student's academic timeline. She argues that advising programs should strategically allocate advising resources to deliver developmental advising practices to the at-risk students who might most benefit. Specifically, Karp highlights the value of developmental advising for students who might be struggling to effectively articulate academic and career goals, as the personalized attention to academic, career and personal growth might best meet this student challenge.

2.2.2 Proactive advising

To capitalize on the strengths of the developmental advising approach, it is perhaps obvious but nonetheless important for advisors to find ways to encourage student engagement with advising services. While there are many research-based advising strategies that could be implemented to develop stronger engagement between these two groups, intrusive or proactive approaches (Karp, 2013; Varney, 2013) are commonly highlighted for their potential to impact student engagement and persistence, specifically at community colleges (CCSSE, 2012). Proactive advising strategies specifically encourage intentionally planned outreaches by academic advisors as a key strategy for increasing contacts and impact on student success. Specifically, these strategies point to consistent contact throughout the term to build a strong

relationship with advisees, with focus on contact before the midterm, before registration for the subsequent term, and at the conclusion of the term (Garing, 1993; Varney, 2013). Within this framework for practice, advisors utilize routine evaluations of their advisees' progress to develop targeted informational or retention-oriented messages to students to share key information and academic tips, to address potential challenges before they become crises, and to motivate students to adopt successful academic and career planning behaviors (Varney, 2013).

The literature suggests that community college students benefit from advising that is delivered in a sustained way throughout the student's entire experience, with emphasis on regularity and at significant points of transition (Drake, Jordan, and Miller; 2013; Karp and Stacey, 2013b; Reynolds, 2013). Proactive advising for community college students has developed as a strategy that encourages advisors (including faculty advisors) to move away from a passive advising model which waits for students to reach a crisis point, towards a more preemptive model that attempts to provide regular and consistent contact at important transitional points in the student experience. This more proactive or intrusive support has been found to have links to student retention (Backhus, 1989; Ryan, 2013), in particular for at-risk student groups (Smith, 2007; Upcraft and Kramer, 1995).

Varney (2013) acknowledges the challenges associated with this high level of contact and engagement, and advocates for tools such as an advisor outreach plan and calendar to help keep advising staff on track with this high demand strategy. Proactive advising in many ways supports the framework for developmental advising, as it more regularly engages the advisor and the advisee and encourages the advisor to engage beyond simple academic planning, allowing for the type of sustained student development enabled by good advising practice. Karp and Stacey (2013b) note that community college students typically lack good help-seeking behaviors and

strategies, a point which they suggest as reinforcing of the value of proactive or intrusive strategies within the community college context. Enabling advisors to provide this intrusive support then becomes an important component of community college advising reform.

2.2.3 Academic planning

Academic advising at its core is an activity designed to assist students in the development of meaningful academic plans (CAS, 2006). Yet, as noted in the development of the case for academic advising reform, one of the primary barriers to student retention that emerges from the literature is a deficit in good academic planning by students, and a consistent lack of effective institutional supports to remediate this student need (Bailey, et al, 2015; Goldrick-Rab, 2010; Jenkins and Cho, 2012; Karp, 2013). Jenkins and Cho (2012) articulate a predominant community college environment that has high numbers of options and choices, but that carries equally high risks for poor academic choices in terms of lost time and financial resources, and in terms of lost credits or diminished transferability. Karp (2013) asserts the value of academic planning activities, especially for students who are struggling to grapple with a decision regarding their overall course of study. Increasingly, advising technologies are becoming available to assist advisors and students in developing and maintaining academic plans that align with students' broader career and personal aspirations (Tyton Partners, 2016a). This technology can provide a platform for students to more clearly see the implications of good and poor choices, and the relationship between academic choices and their overall progress towards an academic credential.

Consistent with approaches in developmental advising, White and Schulenberg (2012) suggest that helping students to “craft a coherent educational plan based on an assessment of

their abilities, aspirations, interests and values goes right to the heart of what academic advising is hoping to accomplish” (p.11). While this statement echoes the ideal goals of advising, academic planning too has its challenges. Similar then to the challenges with developmental advising, academic planning activities are only as effective as are advisors’ efforts to engage students. Particularly in the community college context where advising activities are often optional and where advisors can be difficult to access based on high case-loads (Karp, 2013) developing the ongoing connections with advisees to sustain this good planning can be a challenge.

2.2.4 Career advising

Of all of the advising strategies that are intertwined in the literature on community college academic advising reform, perhaps the strategy most consistently mentioned is the integration of academic and career planning. While college students at-large struggle early in their academic experiences with the development of informed career goals (Grubbs, 2006), community college students are particularly prone to such challenges (Karp, 2013). As such, Habely, et al (2012) note that community colleges are integrating career and advising services at a much faster rate than their four year peers. Gordon (2006) notes that even those students who enter college with a declared major can benefit from career advising, as these students may not have effectively integrated their strengths and abilities into that decision, or they may not have a sound grasp on the rigors of the coursework in their proposed program. Well-established cognitive and identity development theories (see Baxter Magolda, 1992; Chickering & Reisser, 1993; Perry, 1968; Schlossberg, 2005) provide important frameworks for an understanding of the development of college students in relationship to the need to commit to an academic program or

major. These theories point to the entry into college as a time when students struggle to understand who they are, and as a time when students only initially begin to establish clear personal goals, vision and identity. John Holland's (1973) seminal theory on career development echoes the need for these commitments to develop over time, and suggests that students need to be engaged in and supported through a career development process whereby they learn about themselves and about potential careers options. With this theoretical background, it is not difficult to imagine that students might potentially struggle to define such a major life decision if they are not in an environment conducive to such growth and development.

Different than career counseling, career advising strategies embedded within academic advising activities can help students to intentionally explore their skills and interests through coursework and other extracurricular engagements, and over time, can assist students in moving towards a set of articulated career and life goals (Feller and O'Bruba, 2009; Hughey and Hughey, 2009). Habley asserts that students do not make decisions about their careers and their academic coursework in isolation, further suggesting the value in integrating these services. This can be accomplished with both formal mergers of academic advising and career services offices, or through the development of career advising competencies for academic advising teams (Nelson and McCalla-Wriggins; 2009).

2.2.5 Integrating technology

In addition to these integration strategies, career and academic advising strategies increasingly rely on technology to more effectively provide information to students (Karp, et al, 2016). These technologies can help students to explore careers and job families early in their college planning process, or can assist students in exploring their own interests and abilities

while on campus (Carr and Epstien, 2009; Karp, 2013). Engagement with these electronic career development strategies can have a positive influence on students' career development (Tirpak and Schlosser, 2013), and can also extend the impact of stretched advising offices by encouraging students' self-exploration abilities. Some studies have linked utilization of these technologies with increased student persistence within an academic program (D'Achiardi-Ressler, 2008). Incorporating technology into integrated career and advising supports can provide a useful supplement and extension to in-person advisor strategies, and can strengthen the developmental advising goals of promoting academic, career and personal development.

In addition to the integration of academic and career planning technologies, many institutions also utilize additional technologies to track and monitor students at risk of attrition (Tyton Partners, 2016b). While these tools are often used in isolation and without any meaningful link to academic advising programs, integrating these technologies and the associated support for at-risk students is a recognized strategy for further enhancing the effectiveness of advising programs (Karp and Stacey, 2013a). Academic advisors can incorporate the data associated with these retention-related technologies to inform proactive advising efforts, and can utilize the data on student progress to better inform developmental advising approaches.

2.3 ADVISING UNDECIDED STUDENTS

Students who enroll at a college or university with unclear academic goals have been the subject of research attention for nearly a century. Gordon (2007) defines undecided students as individuals "unwilling, unable or unready to make educational or vocational decisions", and this

fairly broad outline of the undecided student provides an excellent foundation to begin building a deeper understanding of this population. There are many ways to define undecided students (see Gordon, 1998; Newman, Fuqua and Minger, 1990; Savickas and Jorgouna, 1991), and many points along a student's academic trajectory where they might become undecided (Allard, 2006; Noel, 1985; Steele, 1994), but the most distinguishable point of indecision is at student entry into college (Lewallen, 1995). While statistics on this group vary, some research suggests that the majority of college students might actually enroll undecided about their long term academic and career goals (Gordon and Steele, 2003), suggesting that the struggle to find clarity about academic and career goals might be a common challenge for incoming students.

Jenkins and Cho (2012) suggest that undecided students are particularly vulnerable in the high choice/ low support context that community colleges are predominantly providing. This context suggests that undecided community college students could be a group of students that are potentially at a high risk of attrition, but may also be in an optimal position to benefit from the types of enhanced advising developed throughout this study. While a strategic focus on undecided students then is an ideal choice for this advising pilot program, the literature draws many parallels between undecided students and essentially all other community college students. Karp (2013) suggests that the larger community college population also likely struggles with career and academic decisions, and so attention to what works for undecided students also has broader implications for the larger community college student population. Those strategies that work to assist community college undecided students might then be expanded to larger cohorts of students, and so a pilot with this population will provide meaningful insights into opportunities for broader advising reform at the institution.

2.4 POSITIVE OUTCOMES OF IMPROVED ADVISING

While incorporating strong, research-based advising practices and strategies certainly is a goal of this broader advising reform effort, what ultimately matters most is the impact that the advising program might have on the students that it serves. As such, outlining these desired outcomes of improved advising is a helpful exercise as I begin to develop an approach to evaluate the overall impact of the advising pilot program. Drawing upon the themes developed through the literature on the impact of the advising practices discussed above, we might expect that a more effective advising program can regularly engage students with the advising services and resources that it provides, can motivate the type of behaviors that demonstrate the development of improved academic and career planning competencies, and can ultimately impact student retention and success.

2.4.1 Increased student engagement

Student engagement in learning is often cited as one of the most recognized conditions for overall student success and persistence towards educational goals. Seminal works by Austin (1991), Pascarella & Terenzini (2005) and Kuh, Kinzie, Schuh & Whitt (2005a; 2005b) all point to engagement as a student behavior strongly correlated to student success. Kuh, et al. (2005a) demonstrates this by indicating that “what students *do* during college counts more for what they learn and whether they will persist in college than who they are or even where they go to college” (p. 5). Academic advisors can play a critical role in this engagement process by teaching students to become knowledgeable and active participants within the college community (NACADA, 2006). Campbell & Nutt (2008) summarize the potential for increasing

student engagement through intentional academic advising by stating:” when viewed as an educational process and done well, academic advising plays a critical role in connecting students with learning opportunities to foster and support their engagement, success, and the attainment of key learning outcomes” (p. 4). Advisors can also help students to engage more intentionally in their academic studies by helping to establish a personal connection with their own goals and values, and by outlining the college’s intentions behind their curriculum (Lowenstein, 2009).

2.4.1.1 Increased engagement with advisors

In addition to the broader connections with student engagement and student success, each of the advising strategies detailed above is predicated on student engagement with the advising program. It is obvious then, but important, to note that for an academic advising program to have any real impact on students, on their behaviors, or on their overall success, they must have some meaningful engagement with the advising program and its staff. Karp, et al (2015) note that for advising programs to have the type of aspired impact on students, the programs must be providing a forum for ongoing advisee and advisor interactions that sustain throughout the students’ academic career. As such, student engagement with their academic advisor is of paramount importance to this study, and becomes the central point of focus for the pilot program and its ongoing review. For efforts in advising reform to be successful, student engagement then becomes one of the primary measures of programmatic success.

2.4.1.2 Increased engagement in academic and career planning activities

While the importance of the integration of academic and career planning strategies into advising work is noted in prior sections, it is the response of students, not the actions of advisors themselves, that ultimately impact student development. Henning and Roberts (2016) discuss

the use of learning or development outcomes, or “measures of what students know or do” (p.89), as effective program evaluation measures. In the academic and career planning context, Karp (2013) suggests that students’ engagement with career planning tools can have an impact on their knowledge about themselves and their match for potential careers, ultimately having a positive impact on their overall career development. In addition, Jenkins and Cho (2012) reinforce the value of student engagement with academic planning activities as an effective strategy to keep students informed about their progress and on track towards an academic credential.

2.4.2 Improved student retention and success

Retention is one of the most prevalent and widely recognized standards for student progress. Specifically, the rate at which a college retains students from term to term and year to year is an essential and mandatory indicator of student progression at any institution (IPEDS, 2016b). While most four-year institutions rely heavily on the first year retention rate (Fall to Fall), the dynamic enrollment patterns of community college students suggest that term-to-term-retention will yield important data on student progress. The Voluntary Framework for Accountability (VFA) advocates for a term-to-term capture of student retention (VFA, 2016), as do many other community college data initiatives. Based on the theoretical connections between academic advising and student retention and the broader focus of academic advising as a meaningful reform to improve longer-term student outcomes, improved retention of students from term to term is a reasonable outcome for academic advising reform. In addition to retention, iPASS reform efforts also encourage programs to identify other meaningful measures of student success (Karp, et al, 2016). Specifically, measures such as student term GPA and successful rates of course completion are identified as potential metrics that can be used in combination

with student retention to gain a deeper understanding of the potential impact of advising reform efforts (iPASS, n.d.). However, these indicators of program improvement are considered lagging indicators (iPASS, n.d.) or summative assessments (Henning and Roberts, 2016), because they are not accessible until after the completion of an academic term.

2.5 EVALUATION OF ADVISING REFORM

As highlighted in the opening paragraph of this overview, Langley et al note that “Change is difficult. The current system pulls innovative changes toward more familiar ground like a giant magnet. What begins as a large change can result in only a small adjustment.” (p. 93). Often, efforts to improve higher education involve the implementation of strategies that are suspected or hoped to have some form of sustained impact, but consistent with the passage above, ultimately do not move the needle on student success. Merely putting new initiatives in place and hoping that they take hold and achieve the desired results will not serve to meet the needs of either students or the larger campus community. Assessing the effectiveness of an intervention then becomes an essential component of reform. Troxel (2008) accounts the importance of effective program assessment through the statement, “Educators have a professional, ethical obligation to determine, through the systematic gathering and analysis of evidence, whether pedagogical interventions improved student learning and development in the ways for which the program was intended” (p.386).

2.5.1 Domains of advising evaluation

While it is clear that program evaluation is important, there is no standardized approach for completing such an evaluation. Themes do emerge from the literature on program evaluation (Henning and Roberts, 2016) and outcomes-based assessment (Tull and Wallace, 2015). These evaluation methods ask whether a program is delivering upon its intended outcomes, and often then have a very direct connection to the specific goals of the program, or to the goals of the larger institution. Specific to the evaluation of academic advising reform, the literature suggests that measurements of such goals should come from a variety of important domains. In the iPASS technical implementation guide (iPASS, n.d.), the authors discuss the importance of tracking data across five different domains of reform. This guide suggests that evaluators should focus on identifying measures to understand structural, process and attitudinal changes that are occurring within the initiative, as well as measures to monitor how technology is being taken up (a critical component of iPASS reform). Because of the strong theoretical connections with advising reform and student success, the additional domain of reform focuses specifically on understanding the impact of the program on distinctive measures of student progress and success. Karp et al (2016) reiterate the importance of evaluating a program across these domains, and provide specific attention to the need to understand how organizations are redesigning standard processes and procedures to create the conditions necessary to increase student engagement with advising resources (process evaluation) and how well specific advising strategies are being implemented (structural evaluation). Troxel (2008) further highlights the importance of assessing both process improvement, measured through efficiency or effectiveness, and outcomes improvement measured through program impact. This literature then consistently highlights the value of extending advising program evaluation to understand

changes in the process and structures that are part of the reform, as well as in the direct outcome the reform is having on target audiences, or on desired program outcomes such as those discussed in prior sections.

2.5.2 Advising evaluation methods

A focus on a mixed method approach is found consistently in the literature on effective evaluation (Mertens, 2014). Specific to the advising community, both the national organization focusing on academic advising (NACADA), and the Council for Advancement of Standards (CAS), also give significant attention to the need to assess the effectiveness of advising programs using a variety of methods (NACADA, 2016). Henning and Roberts (2016) further reinforce the value of using a variety of methods to evaluate programs, and suggest that both quantitative and qualitative data can provide different perspectives on a program's impact, with qualitative data also lending to the development an understanding of the implementation process itself. They also note that when attempting to identify these qualitative and quantitative measures for assessment, there is practical value in attempting to identify data points that are readily accessible at the institution if they can efficiently inform the program evaluation efforts.

Across all domains of program evaluation, iPASS efforts highlight the use of leading indicators, or indicators that are predictive of student success outcomes, and lagging indicators, which are often the measures of student outcomes themselves. In addition, the importance of the development of leading indicators that can inform continuous improvement efforts during the course of the intervention itself highlighted as an important condition for developing sustained, meaningful reforms (iPASS, n.d.). Henning and Roberts (2016) parallel this strategy by outlining the use of both summative measures, which can provide holistic insight on the

cumulative effects of a program at its conclusion, and formative measures, which can provide ongoing feedback about a program through its implementation, with the specific focus of providing data to inform program modifications before the conclusion. Robbins and Zarges (2011) specifically place value in the development of effective ways to use feedback to continuously improve advising programs, which is a theme consistently echoed in other forms of educational assessment (see Suskie, 2009).

2.5.3 Iterative approach to advising reform

While the aforementioned SSIP and iPASS initiatives provide research-based frameworks for change and adhere to a particular focus on the needs of community colleges, the complexities involved in applying these frameworks to local practice are noteworthy. Higher education organizations can be complex and unwieldy enterprises, and efforts to develop, implement and analyze strategies to improve organizational and student outcomes can be challenging at best (Karp, et al, 2016). Increasingly, research within the educational setting has acknowledge this complex environment, resulting in an emerging focus on strategies which leverage iterative feedback loops as an important component of organizational improvement. While utilizing data to inform future decisions is the standard for any program assessment (Suskie, 2009), developmental evaluation strategies (Patton, 2010) balance traditional program evaluation methods with ongoing, iterative feedback cycles intentionally designed to encourage program revisions throughout the duration of the implementation period, not simply after a conclusive review.

Additionally, methods based in organizational improvement science (see Langley, et al, 2009) and practitioner-based action research (see Herr and Anderson, 2005), often leverage

embedded strategies to encourage the development of this type of formative assessment data. Consistently, these methods deploy some form of a Plan, Do, Study and Act (PDSA) cycle to encourage the development of meaningful reforms through smaller scale, intentional efforts to capture and build upon individual and organizational learning. These PDSA iterations can be incorporated into the implementation of a change initiative to test strategies throughout the duration of the project, respond to formative data identified within the project, and to then make modifications in response to that data. In this way, the iterative design cycle becomes a strategy embedded into the evaluation design. In addition to contributing to the development of more powerful innovations, these feedback loops also provide a medium for professional growth and development by those individuals involved in the iterative process, and can create a forum for the creation of professional learning communities (Herr and Anderson, 2005).

2.6 THEORY OF ACTION FOR ADVISING INTERVENTION MODEL

In response to the needs of BC3 students, the pilot intervention that is the focus of this dissertation in practice study leveraged improved advisor strategies and aligned supporting structures to create conditions to pull students to the academic advising program. While one of the primary intentions of the intervention was to influence engagement with advisors, the literature suggests that driving such engagement could also have a direct and positive effect on student retention. Through the increased contact that was expected as a result of the pilot and the ensuing relationships between advisor and advisee, advisors were in a better position to more fully impact student development throughout the semester by encouraging stronger academic and career planning behaviors, and ultimately, by directly promoting student success and retention.

Thus, the model below highlights the direct impact that student engagement can have both on increasing positive student behaviors and on student retention and success, while also acknowledging the reinforcing relationship that positive academic and career planning behaviors can have on student retention and success.

While the focus of the intervention was on aligning both advisor and program strategies to encourage engagement, this goal was further strengthened through feedback loops incorporated into the program design. Throughout the course of the pilot intervention, organizational learning and change management strategies were incorporated to make sense of the potential impact that strategies are having on student engagement, with this information then directly feeding new advisor and program-based approaches to increase engagement further. This organizational learning cycle then encouraged engagement through intentional practices, but also utilized data on engagement levels to increase the efficacy of future engagement efforts. Effective strategies were shared and more broadly implemented, while ineffective strategies were studied and improved upon. This iterative loop influences both advisor efforts and larger structural reforms and is symbolized through the feedback loop between advisor and program strategies and student engagement. A model for the advising intervention at BC3 is presented in Figure 1 below.

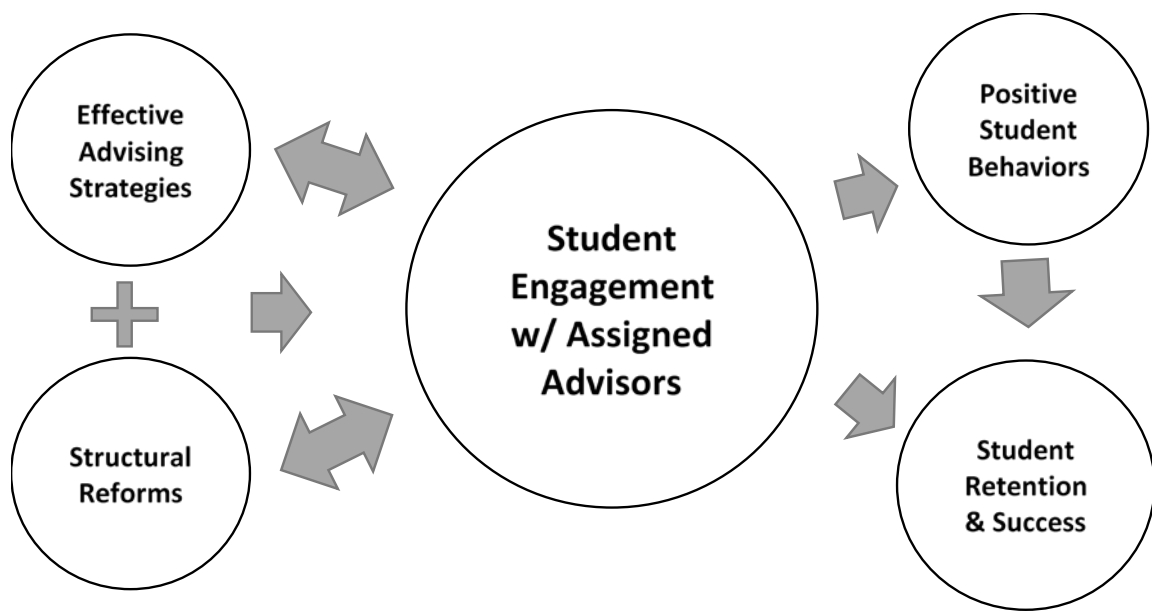


Figure 1. BC3 Advising Intervention Model

3.0 INTERVENTION AND METHODOLOGY

This chapter discusses the proposed advising intervention program for undecided students, and provides details on plans to increase student engagement and student outcomes through an iterative design process. In addition, this chapter provides an overview of the methodology used to assess the effectiveness of this advising intervention model using both quantitative and qualitative approaches. The chapter concludes with discussions of researcher's reflexivity and limitations of the methodology and approach.

3.1 PROPOSED ACADEMIC ADVISING INTERVENTION FOR UNDECIDED STUDENTS

The need to provide more intentional supports for community college students resounds from the literature, and academic advising programs provide a clear place to launch such initiatives. In alignment with key staffing changes within the BC3 advising office, efforts were made to engage the advising staff and program as a whole in the types of substantive change challenged by the literature. In response, the professional advising team outlined points of potential impact within the groups traditionally served by the office, as well as current barriers to student engagement with the program. Drawing from the research on the impact that enhanced academic advising can have on community college student success, and specifically from the

body of literature focused on supporting undecided students, a pilot intervention was developed to integrate key advising strategies for undecided students and to assess their impact on desired outcomes. Ultimately, these efforts were in alignment with the desire to improve students' success at BC3, with specific focus on doing so through sustained and meaningful engagement with academic advisors. This pilot intervention included changes in advisor efforts to engage with undecided students in a more proactive and strategic way, as well as developing structural changes to encourage the successful implementation of the pilot strategies. Both strategies are discussed in detail below.

3.1.1 Advising engagement

Research suggests that community college students benefit from advising that is delivered in a sustained way throughout the student's entire experience, with emphasis on regularity and at significant points of transition (Drake, Jordan, and Miller; 2013; Karp and Stacey, 2013b). BC3 advisor contact data and advisor feedback on their experiences from prior semesters both highlighted a lack of any sustained engagement between advisors and advisees. This engagement is of paramount importance for sustained student success (Reynolds, 2013), yet it is apparent that the current environment is not enabling such a culture.

Considering this important local context and the value of advising engagement espoused by the literature, one of the primary goals that drove this effort was the desire increase the points of contact between academic advisors and their assigned advisees. While there were many research-based advising strategies that could be implemented to develop stronger engagement between these two groups, intrusive or proactive approaches (Karp, 2013; Varney, 2013) are commonly highlighted for their potential to impact student engagement and persistence,

specifically at community colleges (CCSSE, 2012). Proactive advising strategies specifically encourage intentionally planned outreaches by academic advisors as a key strategy for increasing contacts and impact on student success. Specifically, these strategies point to consistent contact throughout the term to build a strong relationship with advisees, with focus on contact before the midterm, before registration for the subsequent term, and at the conclusion of the term.

Building on these proactive strategies, academic advisors developed an individualized plan to improve their outreach to students throughout the term, but each advisor focused specific attention on efforts to connect with students once before the midterm, and once during the registration timeline for the subsequent Spring semester. In addition, more targeted efforts were made to engage advisees who had failed to register for the Spring term by the conclusion of the Fall term. Advisors were challenged to draw from academic advising literature to develop personal strategies to encourage student participation, and specifically recorded these strategies and the results of their efforts for discussion with the broader academic advising team. Strategies included holding open meeting hours in the learning commons, email campaigns, or other personalized outreach to advisees. While approaches differed, the primary goal of sustained and proactive communication and subsequent engagement drove this component of the pilot initiative.

As contact with advisees at specific points in the semester was the desired outcome of this effort, advisor engagement became the focus of efforts to evaluate the pilot's impact. In response to the current lack of sustained contact, a positive and expected outcome of this proactive outreach by advisors was a significant increase in students' engagement with their assigned academic advisor when compared to a similar population from the prior year. Not only might there have been expected to be a statistically significant increase in the number of students

engaging with their advisors (relative to prior semesters), but it could have also been expected that students would engage with their advisors more frequently than they have in prior semesters. While the comparison of all undecided students has value, it is important to acknowledge that differences may exist between the behaviors of first semester students and students who have matriculated beyond that first term. As such, drawing out data specifically on the “new” members of the cohort provided a more nuanced understanding of the program’s impact on students.

3.1.2 Academic and career planning

While contact itself is important, it is somewhat obvious to assert that this contact must have some meaningful content for it to be of value to students, or of any impact on the student experience. If outreach efforts encourage increased levels of engagement, advisors will likewise have increased opportunity to utilize more holistic advising approaches to impact students’ personal and academic development (Grites, 2013). Drawing from the extensive literature on academic advising’s role in supporting undecided students, the second key focus of this pilot was to incorporate a stronger academic and career planning focus into academic advising activities (see Gordon, 2006; Gore and Metz, 2008; Grites; 2013; Habley, et al, 2012; Hughey, et al, 2009; and Karp, 2013, Wyner, 2014). While this research advocates for this enhanced advising for all students, undecided students clearly have much to gain from such structured support targeted at the development of informed career goals and an aligned academic plan. As such, advisors leveraged their more frequent outreach and contact to explicitly encourage longer-term academic planning activities, as well as timely career exploration and decision making activities.

3.1.2.1 Academic planning

Students returning to BC3 for subsequent semester often delay enrollment well beyond the opening of the registration period. This suggests either a lack of readiness to effectively engage in the enrollment process, or a lack of information about the negative implications for delaying enrollment. Through intentional planning activities that occur prior to the opening of the registration period, advisors can provide the information and planning support that will encourage students to demonstrate positive, early enrollment behaviors. While there is no current, comparable measure to directly assess students' engagement with planning activities, the desired outcome for these activities is timely registration. Timely registration is a measureable goal, and one that can be compared against the prior year to further understand if the program had an influence on significantly decreasing the time that students wait to register for classes for the subsequent term.

3.1.2.2 Career exploration for new students

In addition to direct academic planning, undecided students also benefit from engagement with career exploration resources early in their academic career (Karp, 2013; Tirpak and Scholsser, 2013). The college utilizes an electronic career development platform, FOCUS2, to provide students with the tools and resources to explore their own skills and interests. For students in the undecided cohort who are considered “new” to the college, these activities can have particular impact, as they provide structured opportunities for exploration of major and future career. Advisors focused specific attention then on this new group of advisees to expose students to this tool and to explicitly encourage its use. With advisors focusing on engaging students with this tool, I can assume that for these efforts to be deemed as effective, I would see statistically significant increase in the overall registrations on the FOCUS 2 site. As this tool

contains information on student registrations and usage activities, monitoring student usage provided a meaningful assessment of this initiative for new members of the undecided group.

3.1.2.3 Career planning for continuing students

Encouraging engagement with the college's online career development platform becomes a meaningful activity for new members of the cohort, but advisors should also focus on the career development needs of those students who have matriculated beyond their first semester. For these students, remaining undeclared at an associate degree granting institution for more than one year represents a potentially significant barrier to timely completion of a credential. Those students then who are not "new" to the college require a different type of intervention, with different desired outcomes. For this group of students, the increased contact and, the personalized nature of the advising approach provided new opportunities for advisors to focus on understanding a student's individual situation and to subsequently assist students in successfully declaring a program of study. Through this approach, it was then predicted that students who are beyond their first semester of enrollment might declare an academic program at a rate that is statistically higher than in the prior year.

3.1.3 Structural support for program success

These efforts to engage with advisees become the core focus of the implementation, but the literature on developing meaningful reform in advising gives significant attention to the institutional barriers that might inhibit sustained change (Karp, et al, 2013). In addition to this expected outreach directed at assigned advisees, additional efforts were made to identify other structural barriers that had traditionally detracted from advisor and advisee engagement and to

implement strategies that support sustained change. These additional strategies became important elements of change that supported the pilot effort and the larger efforts to improve student success. These included attention to advisor assignment loads, the alignment of both internal office practices and retention reporting structures, the integration of academic, career and transfer planning services, and the incorporation of change management strategies.

3.1.3.1 Assigned advising loads

One of the potential drawbacks of this initiative was the possibility for advisors to be overwhelmed with the amount of contact or for students to ignore the requests for contact. Academic advisors within this office see a large number of students outside of their assigned list, and all also carry administrative work within their job duties, consistent with many community college roles. Literature gives no clear guidance on the appropriate number of advisees (Habley, 2004) and this factor becomes highly contextualized to local practice. Based on this internal context, for this initial pilot intervention, these advisors had roughly 35 assigned undecided student advisees, and this group was the primary focus of their efforts aligned with the pilot program goals and outcomes. Academic advising loads for this cohort were distributed evenly among the four advisors assigned to the cohort, as opposed to being split by two advisors as was done in the prior year. A consistent theme in the literature is the need to develop a personalized approach (see Drake, et al; and Karp and Stacey, 2013b), and this reduction in assigned load from 70 to 35 was done to provide advisors with the time to develop more personalized outreach to each student. By reviewing student files and prior information for each student, developing a plan in consultation with that student, and then following through at key points in the semester to encourage students to meet their goals and to engage with the institution, literature suggest that advisors will have a greater impact on student personal and academic development (see Grites,

2008).

3.1.3.2 Aligning key supports

A review of past practice outlined challenges in both the processes which connect advising traffic in the center with an advisor and with retention reporting system assignments. To address these structural impediments, both office practices and retention alert reporting structures were altered to prioritize the importance of a student's assigned academic advisor. When students entered or called the academic advising center, staff first inquired who the student's assigned advisor is, and if it is not known by the student, the front-line staff informed the student and facilitated a connection between the two individuals for an appointment. When retention data were reported, the coordinating administrator diverted undecided student reports to the student's assigned advisor. This encourages an increased impact in retention alert reporting in two ways. First, students might be more likely to respond to outreach by an individual with whom they have already established a relationship (Harding, 2008). Second, this adds useful student performance information for the advisor, and enhances their ability to incorporate this information into their efforts to assist in the holistic development of the student (Grites, 2008; Habley, et al, 2012). While student-initiated or retention-oriented outreaches were supplemental to the two primary advising meetings, this consistent communication might contribute to the more ideal form of sustained, proactive and personalized advising (Drake, et al, 2013; Karp and Stacey, 2013a).

3.1.3.3 Integrating services

While prior pilot program elements target both advisor behaviors and program structures to improve the advising program, a department transition to an integrated staffing model also

serves as a meaningful component of this reform. Based upon the institutional context discussed prior, and informed through the pervasive literature on integrated services (see Gordon, 2006; Gore and Metz, 2008; Grites, 2013; Habley, et al, 2012; Hughey, et al, 2009; and Karp, 2013), the summer prior to this pilot the office moved toward the integration of academic, career and transfer advising services, and focused on developing academic advisor competencies in all three areas. As such, each of the four academic advisors assigned to the undecided cohort had a shared responsibility for assisting students with the development of their long term academic, career and transfer plans. This integrated approach allowed the advisors to engage in the type of planning oriented conversations encouraged by the proposed pilot, and should not require any hand-offs to more “expert” career or transfer advisors, as was prior practice.

3.1.4 Creating conditions for sustained change

Langley, et al (2012) highlight that organizational change initiatives can often default back to the status quo, and that intentional efforts must be made to sustain desired change. In addition to the specific pilot program elements described above, this program also incorporated two additional elements that will be included in this study; Plan, Do, Study, Act (PDSA) tools and bi-weekly team meetings. PDSA forms are often used in practitioner-based action research to help individuals develop their own practice through small-scale assessment cycles (see Herr and Anderson, 2005; Langley, et al, 2012). This planning and assessment tool was used throughout the course of the semester, first to encourage advisors to articulate the approaches they will take during the first half of the semester, and their expected impact on student contact. Data were then be collected and recorded by the advisors, allowing them to compare expected to actual outcomes and to then refine future planning. Then, a second iteration of this activity

occured in the second half of the semester, again encouraging advisors to plan their engagement outreach for the academic planning meeting, and again to predict, review and refine.

Twice monthly advising team meetings were incorporated into the design to both encourage advisor continued professional development around the topics of academic, career and transfer planning (once per month) and to review the progress of the pilot program (once per month). The pilot progress meetings were a forum for advisors to discuss their PDSA plans and the results, to share challenges and successes with the implementation, to clarify upcoming objectives and to create solutions to challenges that emerge during the course of the pilot.

3.2 METHODOLOGY

3.2.1 Research design

This study utilized a mixed methods approach to develop an understanding of the advising pilot program's impact and implementation. When attempting to understand the impact of a program, Henning and Roberts (2016) articulate the value of causal-comparative designs in higher education assessment as a meaningful way of identifying the impact of an intervention when experimental design is impractical or unethical. This strategy compares observations for the study group against a comparable group of students who have not been exposed to the program in question. Using quantitative data from a variety of program and institutional data sources, I utilized a causal-comparison design (Henning and Roberts, 2016) to determine if significant differences existed between the Fall 2016 study cohort of undecided students, and a similar comparison cohort of undecided students from the year prior (Fall

2015). Using data points to understand student engagement with advising and career services, student behaviors, and rates of retention and success, this design allowed for the comparison of the two cohorts to evaluate the impact that the advising program may have had on desired student outcomes.

Consistent with causal comparative designs (Henning and Roberts, 2016) for data points reported as means or averages, *t*-tests were utilized to test for significant differences between the two cohort groups, testing the null hypothesis at $\alpha = .05$, the standard alpha level for social science research (Kranzler, 2007). To further study the effect of the intervention, Cohen's *D* scores were also calculated with any data that compared two means. For data points that were reported as proportions, *z*-tests were utilized to similarly test for statistical significance of difference between the two cohort groups. Using this test, *z*-scores were calculated and reported with associated *p*-values, again testing the null hypothesis at $\alpha = .05$, the standard alpha level for social science research (Kranzler, 2007).

I also explored several research questions related to the implementation of the advising pilot to understand what strategies worked to engage students, how effectively the pilot program was delivered, and advisors' perceptions on the intervention's impact. Consistent with improvement science approaches utilized to explore processes or changes, data were categorized and reported for themes that emerged from the exploration of the advising pilot implementation process (Henning and Roberts, 2016).

3.2.2 Evaluating changes in student behaviors

There are myriad ways to attempt to assess the impact of an academic advising program, but Robbins (2009) highlights the value of using the institutional data that are readily available in

efforts to evaluate program efficacy. To begin to understand the impact of the pilot program on desired student outcomes, this study looked to this type of available institutional data to understand the program's impact on student behaviors. One of the rationales for utilizing this type of data is the ability to then benchmark and compare data in a way that helps us to better understand the "success" of a program (Robbins, 2009). While understanding the level of engagement associated with a program, for example, might be useful to some degree, comparing similar data points before and after the change can provide a prior benchmark and point of comparison against that benchmark. Understanding the pilot program's impact on expected outcomes then involves both the identification of meaningful data points, and the comparison of these points against a benchmark. Data for the Fall 2016 study cohort was reported and then compared against like data points for the comparison cohort comprised of undecided student enrolled in the prior Fall 2015 term. Demographic data for each of the two cohorts is reported below, disaggregated by common enrollment descriptors including sex, race, enrollment load, and age. In addition, the percentage of new students is included, as this is of particular importance for this study, and the proportion of students residing in the local county is included for its relevance to the local institutional demographics. Data from this cohort comparison is reported in Table 1 below.

Table 1. Study and comparison cohort descriptions

	Study Cohort (Fall 2016)		Comparison Cohort (Fall 2015)	
	n	% of total	n	% of total
Total Undecided Students	147	100.0%	163	100.0%
% New to College	84	57.1%	101	62.0%
% Female	74	50.3%	84	51.5%
% White	135	91.8%	140	85.9%
% Full Time Enrollment	99	67.3%	98	60.1%
% Resident of Local County	102	69.4%	106	65.0%
% Traditional Age (18-24)	128	87.1%	140	85.9%

3.2.2.1 Changes in advisor and advisee contacts

One of the primary goals of the intervention is to connect academic advisors with their assigned advisees, and the theory of action behind this pilot program suggests that as a result of advisors engaging in a more proactive manner and in a context with reduced barriers, students will be more likely to engage with advisors than they have in the past. The institutional data that were available to quantify the frequency of advisor and advisee contacts comes from advisor-entered contact notes in the student information system, providing a direct measure of engagement. These reports were entered by advisors at the conclusion of each advising appointment, and this practice is consistent with practice in the prior year. These data are recorded for each contact, and includes information that can identify the advisor, the student, the date, and the type of contact.

Drawing data from the college's student information system, descriptive statistics detailing the frequency of contact between advisors and students for each cohort were reported. This includes a report of the mean number of contacts per student and the percentage of students in the cohort who have recorded contacts with their assigned advisor. Because one of the goals

of the program is to encourage advisee meetings at very specific points in the term, data on student contacts was also analyzed by the time within the term which these meetings occurred.

In an effort to understand the differences in advisor/ advisee engagement between cohorts, the mean number of contacts between pilot and control group was tested using t-tests of significance for independent samples, testing the null hypothesis at $\alpha = .05$, the standard alpha level for social science research (Kranzler, 2007). In a similar effort to understand the difference between the proportions of students who contacted their advisor between cohort groups, z-tests for comparing two proportions were used, again testing the null hypotheses at $\alpha = .05$. In addition to comparing measures of student contact between the entire cohort of undecided students for each year, there is value in understanding trends in new student engagement with advisors as well. Students without prior experiences might be more likely to be influenced by this revised program than students with prior experiences and established routines. Understanding trends with new students then provides additional, essential information into the efficacy of the advising pilot. For each of the categories of student engagement, an identical comparison was made between only those new members of each cohort, again testing for statistically significant differences between the groups.

This comprehensive set of data on engagement was then utilized to develop an understanding of whether there was a statistically significant difference between percentages of students in the pilot program who engaged with their assigned advisors than was the case in prior semesters, and whether the frequency of contacts increased significantly during the pilot program's duration. Statistically significant increases in either area would demonstrate a positive outcome of the pilot program, and regardless of difference, provide meaningful data to contribute to the discussion of the program's efficacy and impact.

3.2.2.2 Changes in academic and career planning behaviors

While the prior data highlight direct measures of student engagement with advisors and with college resources, an indirect measure of more effective academic and career planning is student registration activity. Students returning to BC3 for subsequent semester often delay enrollment well beyond the open of the registration period. This suggests either a lack of readiness to effectively engage in the enrollment process, or a lack of information about the negative implications for delaying enrollment. In theory, the advising pilot outlined above then has the potential to encourage timely registration through the increased opportunities for both information sharing and direct academic planning, leading to the expectation that students would be more likely to engage in timely registration as a result. While this data point might not provide meaningful data for all institutions, within the local context being studied, it provides a practical and useful point of information because of its focus as a desirable outcome. In addition, proactive advising strategies (Varney, 2013) often rely on student enrollment behaviors (or lack thereof) as crucial data for advisors to act on late in the term. In this sense, these data become both formative in their use to modify advisor outreach behaviors, and summative in their use to understand the program's impact on student enrollment behaviors.

To understand student enrollment behaviors, two different methods were utilized. First, data were collected and analyzed to understand the proportions of students who register for the subsequent semester during two key intervals; the first week of registration and prior to the conclusion of the term. Second, data were collected and analyzed to understand how long, on average, it takes students to reenroll for the subsequent semester (by number of calendar days). For both of these measures, causal comparative design methods provide an opportunity to understand the potential impact of the advising intervention. For each measure, data were

calculated and reported for the full cohort of undecided students from the Fall 2016 and Fall 2015 terms, and compared for statistically significant differences. Similar to strategies utilized for student engagement, data were also reported and analyzed for only the new members of the cohort as an additional method to understand trends within this subpopulation. More details on the specific data collection methods and rationale for each data point are discussed below.

Drawing from institutional enrollment records, the percentage of the cohort that registers during the first week of the open registration period were calculated by dividing those that enrolled within the time frame by the number of students within the entire undecided cohort. As a second measure, similar methods were used to determine the percentage that enrolls before the last day of the term. While it is helpful to understand when students enroll and how many enroll within the timelines reinforced by academic advisors, more meaning can be derived for an evaluation of the program's impact by contrasting these data against the same rates from the similar, undecided student cohort from the prior, Fall 2015 term. These percentages were similarly calculated for each cohort year, and a comparison of these groups using a z-test was used to understand if any statistically significant increases in timely registration is evident for students in the pilot program.

Cohen, Manion and Morrison (2013), suggest that triangulation through multiple methods can increase the validity of findings. In addition to understanding what percentages of the student population enroll within target time periods, there are other methods which provided additional insights into student registration activity. Utilizing student registration data, I determined the number of days beyond the first day of registration that it took a student to first enroll in courses for the subsequent semester, and from the data set for students who ultimately do return for the subsequent term, developed a measure of the mean number of days to

reenrollment. Once this mean was established for both the Fall 2016 and Fall 2015 cohort of returning students, I compared these means using t-tests, and determined if any statistically significant differences exist between the groups. While the prior data points provide feedback on registration activity during important points in the term (first week and prior to term end), these latter data capture the enrollment activity of the entire group of students retained for the subsequent spring semester, and provides additional data to more fully understand these enrollment trends, and the impact that the program may have had on them.

Career Exploration for New Students

A secondary goal of this intervention is to focus on the career development needs of undecided students. The college utilizes an electronic career development platform, FOCUS2, to provide students with the tools and resources to explore their own skills and interests. Research suggests that engagement with these tools can have positive effects on the career development of undecided students (Tirpak and Scholsser, 2013), and advisors will focus early efforts on introducing students to this platform and encouraging its use. The program records student registration, and these data were utilized to track student engagement with the platform during the first half of the term when advisors are specifically encouraging usage. However, as any career exploration at any point within the first term is a positive outcome, data were also collected on student usage at the conclusion of the Fall term. These data were reported as proportions of the cohort who utilized this career development platform at each of these reporting intervals. This platform was also available and utilized for prior undecided cohorts, and it could be predicted that this new approach might provide a more effective structure for engaging students with this tool. As such, cohort comparisons provide a meaningful approach to evaluate the impact of this academic advising intervention. Comparison of the percentages of

the cohort utilizing the program at each interval was conducted utilizing a z-test, the appropriate statistical method for comparing two proportions, testing the null hypothesis at $\alpha = .05$.

To explore the connection between career planning and academic advising engagement for the study cohort, a secondary analysis was conducted to compare the rate of FOCUS2 engagement for students who had connected with an advisor to students in this same cohort who had not connected with an advisor. For each group, the proportion of students who engaged with FOCUS2 was calculated, and these proportions were compared for statistical significance at the $p < .05$ level by calculating z-scores and associated p-values.

Program Declaration for Returning Students

While career exploration becomes the target for new students, advisors also work with students who have matriculated beyond the first semester, but who have remained enrolled within the undecided program. Based on the short, typical timeline for an associate's degree, students who do not make an appropriate career decision within their first semester can be in jeopardy of attrition (Jenkins and Cho, 2012; Karp, 2013). For students who are already beyond their first semester (the subset of the cohort not labeled as "new"), one of the most positive outcomes that can be connected to proactive and engaged academic advising services is students' declaration of a program of study. In tandem with efforts to assess the impact on career exploration with new students, I also evaluated the effectiveness of the program on advancing the career development of the remaining subset of the cohort through measuring the percentage of students who change their program at some point in the term. Consistent with prior analysis methods, I then compared this rate of major change with the rate of the prior cohort of "not new" undecided students. Because it can be expected that the new advising strategies would more strongly support career development and subsequent major change, it was hypothesized that

positive differences would exist for the Fall 2016 undecided subset of students. Based on data being collected throughout the implementation process regarding the impact that advisors were having on major changing behaviors across their entire advising load, a similar, second analysis was conducted to calculate the proportion of the entire cohort that changed their major within the first term. Consistent with the prior design, the two proportions were compared for statistical significance at the $p < .05$ level by calculating z-scores and associated p-values.

The Table 2 summarizes the inquiry questions, available data, and evaluation methods utilized to respond to the associated inquiry question.

Table 2. Methods for evaluating student engagement and behaviors

Inquiry Question	Detailed Question	Data	Comparison Groups	Evaluation Strategies
<i>What impact did the advising pilot have on student engagement with their assigned advisees?</i>	Impact on advising frequency?	Mean contacts per student at term end	Fall 2016 and Fall 2015 Full Undecided Cohort Fall 2016 and Fall 2015 New Undecided Cohort	Descriptive statistics to report means, compare cohort differences using t-test for independent sample ($\alpha < .05$), Cohen's D for effect size
	Impact on percentage of students engaging with advisor?	% of cohort contacting advisor: -Before midterm -After midterm -At any point in term	Fall 2016 and Fall 2015 Full Undecided Cohort Fall 2016 and Fall 2015 New Undecided Cohort	Descriptive statistics to report proportions, then compare cohort contact rates at each interval using z-test for proportions ($\alpha < .05$)
<i>What impact did the advising program have on promoting positive student academic and career behaviors?</i>	Impact on registration behaviors?	% of students registered; -During 1 st week of enrollment period -By end of Fall term	Fall 2016 and Fall 2015 Full Undecided Cohort Fall 2016 and Fall 2015 New Undecided Cohort	Descriptive statistics to report proportions, then compare cohort contact rates at each interval using z-test for proportions ($\alpha < .05$)
		Average # of days past open registration before re-enrollment	Fall 2016 and Fall 2015 Returning Undecided Cohort Fall 2016 and Fall 2015 Returning New Undecided Cohort	Descriptive statistics to report means, compare cohort differences using t-test for independent sample ($\alpha < .05$), Cohen's D for effect size
	Impact on career exploration behaviors?	% of students engaging in FOCUS 2: -Before midterm -After midterm -At any point in term	Fall 2016 and Fall 2015 New Undecided Cohort Fall 2016 Engaged with Advisor and Not Engaged with Advisor	Descriptive statistics to report proportions, then compare cohort contact rates at each interval using z-test for proportions ($\alpha < .05$)
	Impact on major declaration?	% of cohort declaring a program before the term ends	Fall 2016 and Fall 2015 Continuing Undecided Cohort Fall 2016 and Fall 2015 Full Undecided Cohort	Descriptive statistics to report proportions, then compare cohort contact rates at each interval using z-test for proportions ($\alpha < .05$)

3.2.3 Implications for student retention and success

The larger problem of practice that influences this study is the poor rates of retention and success of community college students. As such, colleges routinely report these outcomes, and there is a desire to connect such outcomes to organizational improvement efforts. As the advising intervention was developed from the literature supporting academic advising's role as a positive influence on student retention and success, we can extrapolate that if this program is meeting its intended outcomes, it will have a positive influence on such measures. While this study does not adhere to the rigor needed to draw causation between the intervention and these outcomes, the use of cohort comparisons does provide an opportunity to explore the impact that this program may have on these intended outcomes.

While the pilot program focuses on all undecided students enrolled in the term regardless of their standing as “new” or “continuing” students, retention reporting necessitates a focus on only the “new” members of the cohort. Traditional methods for reporting retention rates, such as those reported nationally through Integrated Postsecondary Education Data System (IPEDS, 2016) or the Voluntary Framework for Accountability (VFA, 2016), include the capture of a “new” cohort whose progress is monitored through subsequent terms. Using this method, only members of the larger undecided cohort who were reported as new, defined as “first time in any college”, a label identified within college records, are included in retention and success measures.

Drawing from institutional term enrollment data, retention rates were calculated by determining the percentage of the new cohort who returned to the college in the subsequent spring semester. The theory of action behind the advising pilot program predicts that by enhancing academic advising for undecided students, the advising team can have a positive

impact on student retention. To test this hypothesis of positive change, the retention rate for the Fall 2016 and Fall 2015 new undecided student cohorts was compared using z-tests, the appropriate statistical method for comparing for significant differences between two proportions.

While rates of retention provide a useful measure of student success, this outcome can be further triangulated through the reporting of student GPA and students' rates of course completion. With the increased focus on timely completion, it is important for students to not only return to the institution, but to remain in good academic standing, and to make progress towards this goal each term. The literature on student completion suggests that in addition to retention, student term GPA and rates of successful course completion can both be leading indicators of student success (iPASS, n.d.). Similar to analysis of retention, student GPAs for new members of the Fall 2016 and Fall 2016 undecided cohorts were compared to test the hypothesis that increased contact may have had a positive impact on student success. Reporting mean GPAs for each cohort, a t-test for independent samples was calculated compare these two groups and to determine if a significant difference between GPA exists between the two groups. Similarly, to calculate rates of course completion, the number of credits each new undecided student initially enrolled in for the respective term and the number of credits that were successfully completed with a D or better were identified. This measure might be highly correlated with term GPA, as course grades are a factor in successful completion, but comparison of course completion rates between Fall 2016 and Fall 2015 new undecided cohorts was completed utilizing z-test for two proportions, providing additional triangulation through the use of different statistical approaches. A summary of the three approaches for understanding the potential impact on student success are summarized in Table 3 below.

Table 3. Methods for retention and success

<i>Inquiry Question</i>	<i>Data</i>	<i>Comparison Groups</i>	<i>Evaluation Strategies</i>
<i>Do Fall to Fall retention rates differ significantly between new members of each cohort?</i>	Retention Rates	Fall 2016 and Fall 2015 New Undecided Cohort	Compare group retention rates using z-test for two proportions ($\alpha < .05$)
<i>Do Fall GPAs differ significantly between new members of each cohort?</i>	Fall Term GPAs	Fall 2016 and Fall 2015 New Undecided Cohort	Compare mean GPAs between groups using t-test for independent sample ($\alpha < .05$)
<i>Do rates of course completion differ significantly between new members of each cohort?</i>	Term Rates of Course Completion	Fall 2016 and Fall 2015 New Undecided Cohort	Compare group retention rates using z-test for two proportions ($\alpha < .05$)

3.2.4 Evaluating advisor engagement strategies

While the prior methods focus on the effectiveness of the pilot program from an impact evaluation lens, it is also important to apply an organization improvement lens (see Langley, et al, 2009) to more fully evaluate the effectiveness of the program's design and implementation. While program level data provide useful quantitative measures of impact, at the very core of this change initiative are the academic advisors themselves, and the final set of evaluation strategies focus on how this change is actually being carried out by those individuals most critical to its success. Studies on educational improvement initiatives caution that efforts to understand a policy's impact must give weight to whether the policy was in fact carried out in an effective way (Rowan, Miller, Correnti and Camburn, 2009). Similarly, McEwan and McEwan (2003) stress the importance of asking questions about the implementation process when attempting to

evaluate a reform effort in education.

This pilot program did not simply consist of the incorporation of new advisor strategies to engage students, but rather incorporated a complex combination of strategic and situational changes that align with the program's primary purpose. As such, additional strategies were needed to develop a more nuanced understanding of the overall impact and effectiveness of this pilot effort. Drawing from research on organizational improvement (Langley, et al, 2009), the intervention model incorporated internal mechanisms to encourage the effectiveness of the implementation itself. These internal strategies provided the type of formative assessment data that could be responded to in an effort to improve the efficacy of the program as it evolved throughout the course of the semester, and also provided data that could be utilized to more fully understand the types of advisor activities and structural strategies that made up the major "changes" from prior program years. Using primarily qualitative data derived from semi-structured staff meetings and advisors' planning documents, the academic advisors themselves provided data on the effectiveness of the implementation process. In addition, this also provided perspectives on the efficacy of the structural modifications put in place throughout the semester to reinforce students' engagement with the advising program.

3.2.4.1 Evaluating advisor strategies through staff meetings

When mobilizing a team throughout a change initiative, recurring meetings provide a needed point to touch base, revisit program goals, and address emerging challenges (Langley, et al, 2009). In addition, they provide a routine, and relatively structured platform to engage in dialogue about the reform effort from the perceptions of those working to implement it. Using semi-structured, focus group-like protocol (Appendix A), advising team meetings became a primary source of data on the progression of the implementation, and became a vehicle for

feedback and continuous improvement to the program. The team met bi-weekly throughout the course of the Fall 2016 term to exclusively discuss the implementation of the pilot program, and to share feedback being derived from advisor experiences with students. Dolle, et al (2013) convey the importance of “networked improvement communities” in bringing about sustained organizational change, and these team meetings serve to provide a forum that can provide similar benefits. These meetings served as both an opportunity for advisors to share best practices (documented through PDSA completion and meeting notes), but also provided a meaningful opportunity to assess the ongoing implementation of the program. Specific to their efforts to plan and assess their own practices through the PDSA, each meeting provided an opportunity for staff to share “Which strategies are working most effectively to engage students?” and “Which strategies were least effect at engaging students?”. While these consistent questions created the conditions for group learning, thematic analysis methods (Menter, et al, 2011) facilitated the clustering of these data into themes to develop an understanding of the strategies that advisors were using during the implementation process that contributed to its outcomes. These data allows us to make sense of these outcomes, in that they provide the ground level insight into what specifically may have driven success (advisor and advisee engagement) outside of the theoretical context (McEwan and McEwan, 2003). Themes in both what works and what doesn’t work in advising engagement were reported and discussed for significance to the pilot program’s potential for scale-up.

As the focus on the pilot program is on the adoption of proactive advising strategies that theoretically will improve student success, these major findings above also informed how consistent the program was to its intended design. As advisors reported out the types of activities that they were engaged in, these activities could be directly contrasted against the

prominent themes found in proactive advising literature (Varney, 2013). This comparison forms the basis for assertions about consistency with intended design, and provided another measure of the implementation of the pilot program.

3.2.4.2 Evaluating strategies through planning documents

While a variety of approaches could be utilized to encourage advisors to fully participate in the pilot program and its ongoing assessment, research on improvement science suggests that formally developing plans and targets can have a positive impact on organization improvement practices (see Langley, et al, 2009). Langley, et al advocate the use of structured Plan, Do, Study and Act process documents as one method for encouraging change participants to thoughtfully approach their work within the initiative. In addition, these documents are noted for their ability to develop continuous improvement mindsets throughout the course of a change initiative. As advisor engagement with advisees is of paramount importance to this study, advisors were challenged to use the PDSA model to personally develop plans for how they will engage with academic advisees, and were encouraged to monitor and report on the results of these efforts through PDSA forms (Appendix B) by sharing with the larger advising team. Then, through this team-based learning, advisors were able further iterations to their plans for the next wave of engagement efforts. In addition to these specific PDSA forms, proactive advising strategies (Varney, 2013) also specifically calls attention to the need for intentional planning of outreach efforts to students. To do this, advisors were encouraged to develop an outreach calendar or summary sheet, and this document also supported the development of a stronger understanding of the strategies advisors are incorporating throughout the term.

These PDSA forms or planning documents became a second source of data to support advisors' responses in the staff meetings. Consistent with methods used in the analysis of

qualitative data, these documents were reviewed and coded, using thematic analysis to report emerging themes (Bowen, Chingos and McPherson, 2009). In addition, advisor documented activities were used to compare against the program's intended design, providing opportunities to more fully discuss whether the program's impact was mitigated by deviations from intended design.

3.2.4.3 Personal journals

Throughout the duration of the study, I was an active participant in all phases of this academic advising intervention, serving as the team lead, and also as an academic advisor testing the driving theories of the model, and learning and developing my own advising strategies. While my own work throughout the pilot is discussed as part of the team based learning in meetings, and is recorded through the records of those regular team meetings, I also continuously engaged in leadership activities to ensure that the advising intervention model continued to move in a positive direction. To record these other views of the implementation process and to specifically document things from a leadership lens, I engaged in periodic journaling to record thoughts and implementation strategies as they emerged through the process. Through this journaling, I was able to more fully capture some of the nuances within the pilot, and was able to develop a more thorough assessment of the implementation and its impact at the conclusion of the process. These data were studied with data from team meeting notes and advisor planning forms to more fully evaluate the effectiveness of the model, and to answer the key inquiry questions highlighted at the conclusion of this section.

3.2.4.4 Perspectives on program effectiveness

In addition to the efforts taken to assess the effectiveness of the intervention model, there is also value in evaluating the barriers to effective implementation that emerged throughout the duration of the pilot. Each of the strategies used in the implementation process was drawn from the literature on advising reform, but theory to practice exercises such as this can run into a variety of obstacles that jeopardize the efficacy of the program. Understanding these potential barriers had value during the implementation so that strategies could be developed to attempt to respond, but also has value at the program's conclusion to contribute to the data that can lead to better subsequent iterations of the advising model. Data from advising team notes and personal journals provided important insights into these implementation barriers.

Additionally, while multiple, direct measures of students' engagement with the advising program provide valuable insight into the pilot's potential impact, the complexities of the pilot program parts could mask which strategies had the most direct influence. As advisors are engaged within the program itself, their feedback on the impact of the specific advising strategies and the individual structural reforms provide valuable insights to help further understand the potential impacts of different pilot program elements. Using intentional, structured questions during staff meetings, advisor perceptions were solicited and documented to more fully understand the effectiveness of the combined pilot program's effort from advisors' perspectives.

By specifically incorporating intentional, semi-structured questions, the advising team meetings became a space for discussion of these barriers to emerge, and for real-time modifications to the program to occur where possible. Data from these meetings was analyzed through a thematic analysis process by sorting and coding responses from advisors on their perspectives on implementation barriers and on the positive impacts of advising strategies,

structural reforms, and increased contact. To more fully understand and summarize these findings, major themes are reported (Menter, et al, 2011).

Table 4 below summarizes the specific implementation questions, sources of data, and methods of analysis.

Table 4. Methods for implementation strategies and effectiveness

<i>Inquiry Question</i>	<i>Data</i>	<i>Evaluation Strategies</i>
<i>To what degree are advisors incorporating new engagement strategies, and how effective are these strategies?</i>	Meeting minutes; Planning Documents, Journals	Thematic analysis
<i>How effective were the implementation strategies?</i>	Meeting minutes; Planning Documents, Journals	Thematic analysis
<i>What impact do the advisors perceive the overall program is having on encouraging meaningful student engagement?</i>	Meeting minutes; Planning Documents, Journals	Thematic analysis

3.3 RESEARCHER'S REFLEXIVITY

My role as Dean of Student Development within the organization that was studied, and my role as an active participant in intervention both create important questions to address in respect to my positionality within the research. In my role at the college, I wear many hats, including work as director of the advising program, as the supervisor of the advising team, and as a practicing academic advisor. While this position placed me in an optimal position to conduct this research from a very pragmatic perspective, each of these roles also presented potential implications for research at this site.

As the individual responsible for overseeing the broader advising program at the college,

I had a vested interest in the program's success and in aligning it more closely to the college's stated goals. I have been working in this capacity for 5 years, and have overseen multiple efforts to make small scale improvements to the program. Many of these efforts have had some defined success, but have lacked the type of rigorous evaluation needed to fully demonstrate impact. In addition, some initiatives have not been sustained due to a lack of sustained focus on the change. These experiences have certainly shaped this study, as the more rigorous evaluation methods and built-in iterative design components drew from these prior challenges. This role also afforded me significant access to institutional data, and as such, it was imperative that I work in collaboration with institutional review authorities to ensure that I maintained appropriate approvals for data utilized in this study.

Of particular note is my role as the supervisor of the professional advising team who were involved in this pilot. While these individuals were involved in this pilot program based upon their roles at the college, their participation in the evaluative elements of this study were not, and it is possible that my position of authority could have been viewed as coercive in respect to advisor participation. As such, I ensured that advisors were fully informed that their participation was voluntary, and that non-participation would not negatively impact their employment. To ensure this, I secured written informed consent from each advisor (Appendix C). Additionally, the research design did not include any elements which might be perceived as evaluative of individual advisor practice, but rather looked at aggregate information across all advisors (including myself).

This last point highlights my third role as an academic advisor participating in the pilot program working directly with the student participants of the study. This role as an advisor presented important consideration, as my work then influenced the outcomes of the study. While

action research principles clearly outline the importance of this type of research for the development of professional practice, nonetheless this consideration further reinforced the need for a strict ethical approach to my own data collection and reporting within this role.

3.4 LIMITATIONS OF THE METHODS/ APPROACH

This research focused exclusively on the impacts of a pilot intervention on a select population of students, and so has limited ability for extrapolation beyond this population or the specific college. Local context played such an important role in the development of the pilot, that this too impacts generalizability. This study provides evidence of the adoption of an intervention model, and the methods utilized to assess program impact, which may have more generalizability and external application than the results of the study alone. In addition, the retirement of staff that were present in 2015 and the ensuing staff reorganization and new hires created an additional variable to consider in relationship to the impact of the new advising program. While staffing changes were part of the larger improvement strategy, the rigor needed to assess the influence of staff inconsistencies between cohort groups represents a limitation to the conclusions of this study.

In addition, this study does not incorporate the type of rigorous analysis needed to draw causation with the outcome items of retention and student success. While the causal-comparison design provides a means to study the differences from year to year, differences in the cohort itself or a myriad of other variables could also impact cohort retention year to year. Caution is then needed when drawing conclusions about the connection between enhanced academic advising and student retention, as this study does not justify such extrapolations.

4.0 IMPLEMENTATION OVERVIEW AND RESULTS

This chapter provides a brief overview of the implementation of the academic advising intervention and of the data collection and analysis processes. In addition, the chapter provides detailed results from the three quantitative major inquiry questions of the study, outlining evaluations of advising engagement, student academic and career behaviors, and measures of student success and retention. Finally, the chapter highlights findings from the qualitative components of the study, guided by inquiry questions aimed at understanding the academic advising intervention's impact on advising strategies, at exploring successes and barriers, and at understanding the impact of the pilot program from advisors' perspectives.

4.1 IMPLEMENTATION OVERVIEW

During the course of the Fall 2016 academic term, beginning in early September and culminating with the start of the new term in January 2017, the academic advising team engaged in a pilot initiative for undecided students in an effort to improve levels of engagement with academic advisees, and to have a positive impact on student success. The four members of the advising team that participated in this study were assigned an equal caseload of new and returning undecided students in the second week of the term, a timeline consistent with prior practice. Once advisees were assigned, the advising team began to meet every two weeks to

discuss advising strategies that were being implemented by individual advisors, to brainstorm and commit to strategies undertaken by the office, or by the group as a whole, and to discuss the success attributed to prior efforts to engage students. Advisors were provided with professional development on proactive advising and the integration of career strategies within these bi-weekly team meetings, and were given the opportunity to develop a personalized set of strategies to engage their advising group. Strategies and plans between individual advisors varied considerably, providing opportunities for productive conversations about best practice and attempted efforts each time the group met.

As the semester progressed, advisors focused their attention first on simply connecting with students early in the term, then with engaging students in career planning conversations, and finally, they focused on engaging students in academic planning activities designed to facilitate early (and completed) registration for the subsequent term. Throughout the process, advisors were provided with a variety of tools and resources to track their own engagement with their assigned advisees, to monitor their progress throughout the term, and to monitor their registration activity for the upcoming term. In addition to tracking these data for their own advising group, advising team members were routinely encouraged to report these data back to the larger network of advisors. Each time an advisor engaged with one of their assigned advisees, they recorded this contact within the Student Information System, a practice consistent with prior years, and a practice that also was consistent with all students the advisors worked with. This individual data collection and sharing supported the iterative work of the team to develop and build upon best practices in engaging students. In addition to planning, implementing and tracking their own work, the team developed additional strategies led by the Dean of Student

Development to directly encourage student engagement via broader outreach efforts and to align internal resources to support the work of the undecided student advisors.

Consistent with the academic advising intervention model detailed in Chapter 1, the intervention focused heavily on increasing engagement between academic advisees and advisors by building a repertoire of effective advising strategies through a team based sharing and learning processes. In addition, broader group and administrative strategies were identified and tested throughout the process, in particular those that might effectively be utilized to bring this initiative to scale for a larger population of students and advisors. Throughout the duration of this study, data were collected on the implementation of process through the recording of advising team meeting minutes, through the collection of team member's individual planning documents, and via personal journals reflecting upon my own experiences both leading and participating in this advising initiative. Upon the conclusion of the semester long initiative, both quantitative and qualitative data were collected and analyzed to assess the effectiveness of this intervention for the group of students it was intended to serve, and to more fully understand the nuances of the implementation process. Following is a review of these data and related analyses.

4.2 QUANTITATIVE RESULTS

At the beginning of the Spring 2017 term, quantitative data sets were created from the college's business intelligence reporting software and from the college's FOCUS 2 administrative database to address the research questions posed in Chapter 3. Specifically, this data collection and subsequent analysis was utilized to assess the intervention's impact on engagement between academic advisors and their assigned advisees and to identify positive

changes in student academic and career related behaviors. In addition, these data and analysis was used to evaluate the impact that the advising intervention might have had on both student success within the first term, and on retention to the subsequent term. This section highlights data and analysis supporting each of these research inquiries.

4.2.1 Impact on advising engagement

At the center of the advising intervention model is the need to increase levels of engagement between academic advisors and their assigned advisees. To evaluate the impact that the intervention model had on advising engagement, advisor contact data entered in the college's student information system was utilized to create a data set of all advisor contacts for the Fall 2016 and Fall 2015 cohorts. These contacts are recorded when an advisor engages directly with a student either in person or through phone or email. These contacts do not represent an attempted outreach by an advisor, by rather an actual interaction between advisor and assigned advisee. The data set includes an identifier for the student and the advisor as well as the date of the contact. Each contact was delivered on a separate row within an excel spread sheet, requiring the researcher to create a calculated variable of total contacts that occurred between each advisee and their advisor prior to the midterm of the semester, the total contacts that occurred after the midterm of the semester, and a variable for all contacts between advisor and advisee that occurred during the duration of the study. This data set was then imported into SPSS, and was utilized to evaluate the impact that the advising pilot program had on the frequency of contact between advisors and advisees and on the percentage of the overall cohort that connected with their advisor.

4.2.1.1 Changes in average advising contacts

An important goal of the intervention was to increase both the number of students connecting with advising and the number of contacts that each student had with their advisor. One measure used to assess this was a comparison of the average number of contacts per student (total contacts divided by total students). To evaluate the impact that the advising pilot had on the average number of advisor/advisee contacts, an independent sample *t*-test was performed to test for significance in difference between the average number of contacts in each cohort year. To further assess the impact, this analysis was conducted using data for both the full undecided cohort for each comparison term, as well as using data for just the new group of students within each comparison term cohort. Finally, to derive additional insight as to the magnitude of this effect, Cohen's *D* was calculated. Results of this set of analyses are found in Table 5 below.

Table 5. Comparison of the average number of contacts per student for full and new cohorts

	2016 Cohort			2015 Cohort			t	df	p	d
	N	M	SD	N	M	SD				
Full Cohort	147	0.72	1.01	163	0.21	0.585	5.483*	308	0.000	0.618
New Cohort	84	0.90	1.07	101	0.20	0.600	5.651*	183	0.000	0.843

*significance <.05

For the full cohort, this analysis indicated a mean of .72 contacts for the study cohort compared to a mean of .21 for the comparison cohort, which is reported as a significant difference at the $p < .05$ level. A Cohen's *D* value of .618 was calculated for this comparison, which represents a moderate effect size. For the group of new students within each cohort, an even higher mean was reported at .90 contacts for the study cohort, which is significantly different at the $p < .05$ level when compared to the .20 contacts for the new comparison cohort. A Cohen's *D* value of .843 was calculated for this comparison, which in this case represents a

large effect size. This analysis suggests that in respect to advising contact, the pilot program had a significant impact on the amount of contacts within the cohort, and that the program had a larger impact with new students.

4.2.1.2 Changes in proportions of each cohort engaging with advisor

In addition to average contacts, a second evaluative measure of advising engagement was drawn from a comparison of the proportion of the cohort that engaged with an advisor at key points within the term. For each cohort, the proportion of the cohort who connected with an assigned advisor is calculated for contacts prior to the midterm mark of the semester, and for contacts after the midpoint in the semester. In addition, a proportion was also calculated for those contacting their advisor at any point in the term using the same data set. To conduct a significance test for two proportions, a z-score was calculated for each of the three contact comparisons. Results of these analyses are found in Table 6 below.

Table 6. Comparison of contact proportions for full cohort

	2016 (n=147)		2015 (n=163)			
	n	%	n	%	z	p
Any Contact	65	44.2%	27	16.6%	5.322*	0.000
Contact Prior to Mid	18	12.2%	7	4.3%	2.567*	0.010
Contact After Mid	56	38.1%	21	12.9%	5.130*	0.000

*significance <.05

Across all three measured timeframes, results of the z-test indicate that the proportion of the study cohort contacting an advisor during the pilot study is significantly different from the proportion of students contacting an advisor during the comparison cohort. Most notably, the proportion of students who engaged with their advisor at any point in the term went from 16.6% in 2015 (comparison) to 44.2% in 2016 (study), a statistically significant difference at the $p < .05$

level. While this test does report a significant difference, it is noteworthy that less than half of the full cohort established contact with an advisor, even during the study year.

In addition to evaluating the impact for each full cohort, a secondary analysis was also conducted to evaluate the same contact criteria for just the new members of each cohort. Again, proportions were calculated across all three contact timeframes, and the results of this study again showed statistically significant differences across all three tests. Results of this new student evaluation are found in Table 7 below.

Table 7. Comparison of contact proportions for new cohort

	2016 (n=84)		2015 (n=101)		z	p
	n	%	n	%		
Any Contact	46	54.8%	16	15.8%	5.584*	0.000
Contact Prior to Mid	10	11.9%	4	4.0%	2.034*	0.042
Contact After Mid	40	47.6%	12	11.9%	5.384*	0.000

*significance <.05

Similar to the results from the comparison of mean contacts, the results of these analyses show that larger shares of the new student population engaged with their advisor at some point in the term, and that significant differences exist between student engagement with advising when comparing the study group with the comparison cohort. Again, it is noteworthy that the percentage of the new group within each cohort engaging with an advisor at any point in the term moves from 15.8% in 2015 to 54.8% in 2016, a statistically significant difference at the $p < .05$ level. While the advising intervention activities focused on encouraging increased engagement earlier in the term than in prior years, these data also suggest that in reality, students are still primarily engaging with academic advisors after the midterm, a timeframe where registration for the upcoming term is often what drives students to their advisor.

It is noteworthy then that across every single measure of student engagement and at all identified key timeframes, there are statistically significant differences in engagement when compared to the prior cohort, and a Cohen's D analysis highlights a large effect of the intervention when the engagement of new students is isolated.

4.2.2 Impact on academic and career planning behaviors

In addition to directly increasing engagement with students, the intent of the advising intervention model was to leverage this engagement to positively influence student behaviors related to registration and career activities. To assess this impact, data were collected on student registration behaviors, on students' utilization of the college's FOCUS 2 career development platform, and on rates of major change for both the study and comparison cohorts. Data collection, subsequent analyses and results are discussed in the following sections.

4.2.2.1 Registration behaviors

To assess the impact of the intervention on student registration behaviors, data were collected from the college's business intelligence software which identified the initial date that students registered for the subsequent Spring term for both the study and comparison cohort groups. Each group was then coded as new or continuing, as in prior data sets. Additionally, variables were created and coded to identify students who had enrolled by the first week of each cohorts registration period for the subsequent term, and to identify those who had enrolled for the subsequent term (Spring) by the conclusion of the Fall term being studied. Using these registration data, a variable was created and coded to identify those who ultimately were retained into the Spring term, and those who were not. Finally, based on the date of registration and

archived registration start dates, a variable was created and calculated to identify the number of calendar days that elapsed between the start of the registration period and the students' first date of registration for the subsequent term. This data set was then imported into SPSS and was utilized to evaluate the impact of the advising intervention model on students' registration behaviors.

Similar to measures used to evaluate advisor engagement, the first method for evaluating impact on registration behaviors was a comparison of the proportions of each full cohort who registered during the first week of the registration period, and the proportions who registered prior to the end of the Fall term. Cohort proportions were calculated for each group and timeframe, and tests for significance were conducted by calculating a z score and associated p-value for each proportion comparison, with significance calculated at the $p < .05$. Results from these analyses are displayed in Table 8 below.

Table 8. Enrollment timeframe comparison for full cohort

	2016 (n=147)		2015 (n=163)		z	p
	n	%	n	%		
Enrolled by first week	56	38.1%	60	36.8%	0.234	0.818
Enrolled by term end	103	70.1%	86	52.8%	3.119*	0.002

*significance $< .05$

These data identified no significant differences in registration activity between cohorts during the first week of registration, but does identify the difference in the proportion of the cohort who enrolled by the term's end as statistically significant at the $p < .05$ level. For the study cohort involved in the advising intervention, 70.1% of the cohort had reenrolled for the subsequent term before they left for winter break, as compared to only 52.8% of the cohort from the comparison year. As retention into the spring term does not occur without registration into

the term, this result has both statistical and practical significance in relationship to the success of this advising intervention model.

To more fully understand the impact on registration behaviors, an identical, second analysis was performed utilizing only data from the new members of each cohort. Consistent with findings for the larger cohort, this analysis also identified no statistically significant differences for first week enrollment activities, but again highlighted enrollment by the terms end to be a significant difference. For new students, 77.4% of the study cohort had reenrolled prior to the end of the term, compared to 56.4% of the new student group from the comparison cohort year. The complete results from this second analysis can be found in Table 9 below.

Table 9. Enrollment timeframe comparison for new cohort

	2016 (n=84)		2015 (n=101)		z	p
	n	%	n	%		
Enrolled by first week	38	45.2%	37	36.6%	1.187	0.234
Enrolled by term end	65	77.4%	57	56.4%	2.993*	0.003

*significance <.05

As a final analysis of the impact on enrollment behaviors, a calculation of the number of days that students took to reenroll was averaged for each cohort to allow for a means comparison and effect size test. As reenrollment is connected to retention in the subsequent term, in this analysis, the sample is narrowed to explore the registration behaviors of only those students who eventually were retained for the Spring term. This allowed me to avoid skewing the data for the cohort with the higher retention rate. Consistent with themes in prior analyses, separate tests are conducted for the new cohort of students who eventually returned, and for the group of continuing students who returned for the Spring semester. Using an independent samples *t*-test, the mean number of days to reenrollment for the groups of returning new and returning continuing students was calculated for each cohort. To more deeply explore the impact by

examining effect size, Cohen's D was calculated and reported. Results for this analysis are found in Table 10 below.

Table 10. t-test comparison of das to reenrollment

	2016 Cohort			2015 Cohort			t	df	p	eta ²
	N	M	SD	N	M	SD				
New Retained	65	12.26	19.535	68	14.35	18.749	-0.630	131	0.530	0.1
Continuing Retained	50	25.54	27.068	45	21.13	23.928	0.837	93	0.405	0.1

*significance <.05

The results of this set of analyses identify no significant differences in enrollment activities between cohort years for either new or continuing students. Consistent with this significance test result, results of the Cohen's D calculation report negligible effect size.

Limitations of Data and Results on Enrollment Behaviors

In the original methodology proposal, the validity of the analysis of impact on enrollment behaviors assumed consistency in the registration timeframes for each term. However, in the midst of this proposal, BC3 adopted new enrollment timelines for Spring 2017 that went into effect during the Fall 2016 term. This change moved the first day of registration for Spring 17 classes for current students two weeks earlier than the comparable registration date for Spring 2016 courses. The goal of this change was in alignment with college level strategies to encourage students to not delay enrollment for subsequent terms. As a result, the causal comparison design for enrollment activities involves a difference in enrollment timeframes for the Fall 2016 cohort participating in the study, and thus challenges any attempts to connect enrollment behaviors and the present study because of confounding impacts of college registration timeline initiatives.

4.2.2.2 Career planning behaviors

As the advising intervention model developed for this study focused specifically on improving support for undecided students, one of the most critical associated outcomes of the impact of advising is the development of positive career planning behaviors in students. To evaluate the impact that this advising pilot had on accomplishing such a goal, data collection was focused on two specific data sets; data identifying engagement with FOCUS 2 (the college's career development platform) and data identifying the official declaration of a college major.

FOCUS 2 Engagement for New Students

To understand how students in the study cohort engaged with FOCUS 2 as compared to the prior year, data were pulled from the college's FOCUS 2 administrative account containing information on student registrations with the FOCUS 2 platform and the initial date of activity on the site. This data was then merged in excel with student data drawn from the business intelligence software using a unique student identifier, and was coded to specifically identify the new students within each of the cohort years. As usage was reported by date, a variable was created and coded to identify students who engaged with the site prior to the midterm point of the term, for those who engaged for the first time after the midterm, and for those who engaged with the platform at any point in the term. These data were then imported into SPSS, and used for the statistical analyses reported below.

To understand the differences between engagement with the FOCUS 2 platform between cohort groups, a calculation of the proportion of each cohort that engaged with the platform within each of the three timeframes for engagement was conducted. These proportions were then utilized to compare the two groups using a z-test for two proportions. For each cohort and

category of usage, a z score and associated p value was calculated, with significance set at the $p < .05$ level. Results of these analyses are displayed in Table 11 below.

Table 11. FOCUS 2 utilization for new students

	2016 (n=85)		2015 (n=101)		z	p
	n	%	n	%		
Any usage	18	21.2%	8	7.9%	2.597*	0.009
Usage prior to mid	12	14.1%	5	5.0%	2.161*	0.031
Usage after mid	5	5.9%	3	3.0%	0.975	0.327

*significance $< .05$

These z- tests outline significant differences between usage of FOCUS 2 at any point in the term, and the usage of FOCUS 2 prior to the point of midterm. The analysis did not identify significant differences between usage after the midterm point. Looking at the overall usage of FOCUS 2 at any point in the term, 21.2% of the study cohort engaged with this career platform, as compared to 7.9% during the prior year. It is noteworthy that the majority of the engagement with the platform occurred prior to midterm, as this was the specific focus of advisor outreach during this timeframe, a finding that will be discussed in the next chapter.

While these data suggest a statistically significant difference between the two cohorts during the two key time frames, even during the study cohort, the proportion of undecided students taking advantage of this college resource is very low. To further evaluate how advisor engagement might be connected to the career planning behavior, a secondary analysis was conducted by linking this data set with the data set developed for student contact with their advisor. Using this new data set, two subgroups were developed, those new students for the Fall 2016 study cohort who contacted their advisor at some point in the term (n=46) and those who did not (n=39). Linking the FOCUS 2 data, the proportion of each group that engaged with FOCUS 2 at any point in the term was calculated, and a z-test for comparing two proportions

was performed to test for the significance ($p < .05$) in difference in FOCUS 2 engagement between these subgroups of new students. The results of this analysis are reported in Table 12 below. The results of this analysis highlight that 30.4% of students who contacted their advisor registered in FOCUS 2, while 10.3% of students who did not engage with their advisor registered with this platform. Z test results report this as a statistically significant difference at the $p < .05$ level. These data suggest that during the study, students who engaged with their academic advisor were more likely to also engage in FOCUS 2 than students who did not engage with their academic advisor. These data support the value of the academic advising contact, and its importance in driving other key student behaviors that correlate to success.

Table 12. FOCUS 2 utilization for new students in study cohort by advisor contact

	Students w/ contact (n=46)		Students w/o contact (n=39)		z	p
	n	%	n	%		
FOCUS 2 usage at any period in the term	14	30.4%	4	10.3%	2.269*	0.023

*significance $< .05$

Impact on Major Declaration Activity

To develop a data set that could be utilized to evaluate the possible impact of the advising pilot on students' declaration of a major outside the undecided program, data for each cohort year were exported from the college' business intelligence software, again consistent with the intent of the causal comparative design. This report produced a field with each student's active academic program as of the end of the term being reported. Using this field, a variable was created and coded to identify students who had changed to another active program. Each cohort was then coded for new and continuing students, as the original study design called for an analysis of only those continuing members of each cohort. A proportion of those changing their

major was calculated for each cohort, and subsequent analysis was conducted to compare the two proportions using a z-test for proportions. The results of this test are reported in Table 13 below. While the proportion of the population that changed their program was reported as nearly double that of the proportion from the prior term cohort, this result was not statistically significant at the $p < .05$ level.

Table 13. Major declaration for continuing students

	2016 (n=63)		2015 (n=62)		z	p
	n	%	n	%		
Changed major	16	25.4%	8	12.9%	1.773	0.077

*significance $< .05$

Of significant value to the results of this study was the continuous, ongoing analysis of the intervention from a variety of angles. One example of that value comes in the early identification of a flaw in the original study design in relationship to efforts to understand the impact of the advising intervention on major declaration behaviors. In the original study design, the argument was presented that once students moved beyond their first semester, they should begin to identify a goal to declare a major outside the undecided program. What was found through the implementation process itself through data gathered from advisors during team meetings was that this positive impact was being seen even with students in their first semester. As students connected with advisors and worked with them through career development activities, advisors reported that many of their first semester students were making commitments to new majors as they prepared for the upcoming semester.

This evidence led to the development of a secondary evaluation of the impact of the intervention on major declaration, which focused on *all* students within the cohort instead of just focusing on those continuing members of each cohort. These data were already coded into the

larger data set, and so a secondary, similar analysis was conducted to compare the proportion of each full cohort that declared a new major by the end of the term. Results of this second analysis are outlined in Table 14 below. In this secondary evaluation, the data support the findings of the advisors, as 24.3% of the fully study cohort had changed their major within the term, which was reported as a statistically significant difference at the $p < .05$ level from the 15.3% that changed their major in the comparison cohort.

Table 14. Major declaration for all students

	2016 (n=148)		2015 (n=163)		z	p
	n	%	n	%		
Changed major	36	24.3%	25	15.3%	1.993	0.047*

*significance $< .05$

4.2.3 Impact on Student Success and Retention.

The final quantitative measures and analyses utilized to assess the effectiveness of the advising intervention model focus on lagging indicators of student success within the term, and eventual retention within the subsequent Spring enrollment term. While research suggests that lagging measures of student outcomes are impacted by a myriad of variables (Porchea, et al, 2010), the advising intervention model developed in earlier chapters suggests that advising, when done well, might have a positive influence on student success, retention and completion. For the purposes of this study, data were extracted from the college's business intelligence software to develop a data set for each cohort year, consistent with the causal comparative design, including delivered data on each student's term GPA, their attempted course load within the term, their earned credits within the term, and their attempted credits for the subsequent Spring term. Due

to the nature of retention reporting, data were coded for new members of the cohort, and analyses were conducted using only this “new” data set.

4.2.3.1 GPA and course completion

Using these delivered data, additional variables were created to calculate each student’s course completion rate for the fall term by dividing the earned credits from the total attempted credits for each student. Using the course completion percentage variable and the term GPA variable, *t*-test for independent samples were conducted to compare the mean GPAs and mean course completion rates between the new students in the study and comparison cohorts. Consistent with prior comparison of mean tests, Cohen’s D scores were also calculated. Results are reported in Table 15 below. In both instances, the results indicated no statistically significant differences between the GPA or course completion rates between the two cohorts.

Table 15. t-test comparison for GPA and course completion

	2016 New Cohort			2015 New Cohort			t	df	p	d
	N	M	SD	N	M	SD				
GPA	84	2.53	1.186	98	2.52	1.222	0.044	180	0.965	0.008
Course Completion	84	0.86	0.316	98	0.84	0.328	0.313	180	0.754	0.062

*significance <.05

To calculate cohort retention, an additional retention variable was developed by coding students who had reported attempted credits for the subsequent Spring as “retained”, and those who did not as “not retained”. Using this variable, a proportion of students who were retained was calculated for the 2016 and 2015 cohort years, and a z-score and associated p-value was calculated to compare the two proportions. Results of this z-test for proportions are displayed in Table 16 below. While this calculation highlights an increase of 10.2 percentage points in the

retention rate for the study cohort, this result is not found to be statistically significant at the $p < .05$ level.

Table 16. Comparison of retention by cohort

	2016 (n=84)		2015 (n=98)		z	p
	N	%	N	%		
Fall to Spring Retention	66	78.6%	67	68.4%	1.547	0.121

*significance $< .05$

4.2.4 Summary of Quantitative Results

As a whole, the quantitative data and related analyses highlight the success of the advising intervention model at increasing the amount of contact between academic advisors and their assigned advisees across all measures, and at all key milestones, within the term. This positive impact was outlined for the entire study cohort, but the effect of the intervention was even larger for new members of the cohort. In addition, these data suggest that the intervention had an impact on the positive behaviors supported by the improved advising model, with specific attention to positive impacts on career related behaviors. While some registration behavior related findings are significant, institutional shifts in enrollment timeframes challenge conclusions regarding the program's impact on this measure. Finally, the data outline promising trends in student retention that should be further monitored as students matriculate to future semesters. Collectively, these data highlight the positive impacts on the advising intervention for undecided students, and specifically draws attention to increases in engagement between advisors and advisees.

4.3 QUALITATIVE FINDINGS

When studying an intervention, qualitative data collected throughout the process can provide an important perspective on effectiveness by helping to “evaluate what worked well and what less so” (Arnold, 2015). Throughout the course of the advising pilot implementation, data were collected through bi-weekly team meeting notes, PDSA planning documents prepared by individual advisors, and through personal journals written by myself. These data were used as part of the iterative design of the program to continuously monitor the implementation of the intervention, and to adjust strategies where needed. While these data were utilized throughout the course of the pilot to improve the intervention and strategies themselves, this cumulative collection also served as a rich source of qualitative data to analyze for larger themes on what worked and what did not work throughout the implementation processes itself, helping to more fully understand the impact of the intervention. Specifically, these data allowed a more nuanced assessment of the intervention’s effectiveness through the review of advisor engagement strategies, the review of the successes and barriers experienced during implementation, and through advisor perspectives of change in practice as a result of the implementation. Table 17 below summarizes these research questions, data sources and related analyses.

Table 17. Implementation inquiry questions

<i>Inquiry Question</i>	<i>Data</i>	<i>Evaluation Strategies</i>
<i>To what degree are advisors incorporating new engagement strategies, and how effective are these strategies?</i>	Meeting minutes; PDSA forms, Journals	Thematic analysis
<i>How effective were the implementation strategies?</i>	Meeting minutes; PDSA forms, Journals	Thematic analysis
<i>What impact do the advisors perceive the overall program is having on encouraging meaningful student engagement?</i>	Meeting minutes; PDSA forms, Journals	Thematic analysis

To approach these questions, data from each of the three sources was compiled at the conclusion of the intervention, and was organized chronologically. The entire data set was reviewed in its entirety multiple times to immerse the researcher in the data. Tables were then created for each of the specific inquiry questions, and data was again reviewed, this time pulling back notes, quotes or evidence that addressed each of the inquiry questions. Once these data were compiled, each subset of data were reviewed and themes were developed to address the inquiry questions. Additional analysis details and the key findings from the analyses for each of the three inquiry questions are outlined in detail in subsequent sections.

4.3.1 Advisor engagement strategies

One of the specific points of emphasis of the advisor engagement inquiry question is the desire to understand whether this initiative resulted in changes in advising practice, analyzed through the strategies used to engage students. While quantitative data and analyses do provide evidence that engagement with advisors increased, an analysis of the implementation data aid in developing an understanding of how different advising strategies emerged, and how effective

these strategies were at engaging students. To address this inquiry question, analysis focused specific attention to evidence that identified advisors' engagement strategies, the frequency of their use, and their perceived and real impact on desired outcomes. A table was developed to organize these data in a way that yielded effective analysis, with attention to strategy type, who deployed the strategy and when it was deployed. In addition, each strategy was coded as "new" meaning that the strategy had not been used in past practice by the advisors or by the collective team. Finally, the table provided a column for evidence on the effectiveness of the specific intervention, coded as either very successful, successful, somewhat successful or not successful based on a review of the contact that resulted from this strategy and from advisor feedback on the strategies given during team meetings.

Each of the advising strategies drawn from these data represented individual or collective efforts taken at different points in the implementation cycle, providing an organized way to view the variety of implementation strategies utilized, and the impact of those strategies. The analysis of these data were then used to summarize changes in advising strategies that emerged throughout the implementation, and to specifically call out those more effective strategies to develop themes.

4.3.1.1 New advising engagement strategies

Analysis of implementation data suggest that advisors were engaging in new advising engagement strategies individually, and that advisors were modifying their strategies throughout the intervention to focus on those strategies that were resulting in increased student contact. Strategies evolved over the course of the pilot program, and individual efforts changed in response to the success of previous attempts. While advisors primarily engaged in email outreach efforts over the course of the advising intervention, advisor efforts become more

personalized and targeted as the intervention progressed, evidence of more effective practice that was emerging throughout the pilot. In addition, new group-based advising initiatives also emerged throughout the intervention, again evidence of changing advising practice in response to the intervention.

Over the course of the implementation, email based engagement strategies were by far the most utilized strategy. While this strategy was not altogether new for advisors, analysis suggests that increasingly effective email engagement strategies were tested and improved upon as the intervention progressed. For example, in the first phase of engagement, two advisors used mail merge to personalize advising emails, and incorporated very specific tasks and deadlines for students to address. These advisors both received greater levels of engagement as a response to these emails than did advisors who did not personalize or who did not provide clear expectations and deadlines. When this was shared with the team, additional advisors began to incorporate more personalized approaches in email efforts, and began incorporating clearer expectations for engagement. Similarly, during a team meeting, one advisor asserted that incentives might promote more engagement, even through email outreach. To test this theory, the advisor used a \$25 gift card to encourage students to engage in the FOCUS 2 product via an email invitation with specific instructions. The results were excellent, and students not only increased response rates to the email communication, but also engaged with the career development platform at higher rates than other advisees.

In addition to email outreach designed to increase student engagement, in a change from prior years, advisors also adopted a variety of other strategies to attempt to encourage student engagement. These efforts ranged from invitations to coffee at the on campus café, targeted phone calls to students who had not yet reenrolled, and personalized postcards sent to disengaged

students. These targeted strategies emerged throughout the course of the term, and in particular, these more targeted practices were developed in response to advisor's individual data collection regarding the engagement of their own advisees.

While individual strategies were widely adopted by each advisor based on their own preferences and ideas, the group also agreed on a variety of team based outreach efforts aimed at impacting advising engagement indirectly by more broadly increasing students' awareness of their advising assignment and the need to connect with their advisor. Advisors attended a variety of popular campus events, and developed "Find Your Advisor" handouts to share with students at these events. At these campus events, advisors engaged students in conversations about who their advisor was, and inquired if they knew how to contact them. At the midpoint of the term one advisor commented that these outreach initiatives were "what felt most worthwhile", and that "the best conversations [with students] came from this setting". Additionally, the team developed a message that displayed on the students' Portal page alerting undecided students to "See your advisor ASAP", and also developed consistent plans for engagement with high risk advisees during midterm reporting time.

Analysis of data on strategies suggests that advisors did in fact engage in new advising strategies throughout the implementation process, and that those strategies were developed as a function of the intervention itself. Many of the strategies that emerged did so out of team based conversations or individual piloting throughout the course of the intervention. To more fully understand the impact of these strategies, both successful and unsuccessful efforts were grouped together and explored for important implementation themes.

4.3.1.2 Themes from effective strategies

Clearly, advisors were engaged in the development and implementation of a variety of new strategies aimed at increasing students' contacts with their assigned advisor. Throughout the course of the implementation, the advising team meetings provided a forum for advisors to come together to discuss strategies, to share their perceptions on the impact of those strategies, and to engage the group in discussion around these approaches. Throughout these conversations, points continually emerged that were captured repeatedly in team meeting notes throughout the term. Reviewing these meeting notes, several themes emerge around those strategies that advisors consistently highlighted as effective. These themes include the use of targeted approaches, engagement outside of email, and the cumulative effect of sustained outreach.

Targeted Approaches

Consistent with the research on successful academic advising models (Karp and Stacey, 2013), the advising team clearly deployed targeting strategies to more effectively engage students. This targeting came in many forms, including through personalized emails, by sending different communications to different lists of students, and through custom outreach at key points that addressed relevant student concerns. Of specific note were advisors' comments regarding the value of personalized approaches and clear expectations.

During a team meeting where advisors were reporting the results of their efforts to connect with students at midterm, one advisor specifically commented that a student has shared with her that her "personalized feedback was the reason I followed up". In another team meeting where best practices were being discussed, and advisor bluntly stated that "personalization works!" This personalization went well beyond just including first names in email outreach however. Repeatedly throughout the implementation, staff commented that the efforts being

made as a team to focus on our advisees and to be thoughtful about proactive strategies was resulting in a stronger connection with advisees. Over the course of the term, advisors commented that they knew their advisees' names, could recognize their advisees, and had more in-depth knowledge about advisees than ever before. This increased personal connection that advisors felt with advisees then translated into advisors having "more purpose" when engaging advisees, further increasing the personalization of their approach.

In addition, the setting of clear expectations emerged as a successful targeted strategy. As advisors first began implementing strategies, some still relied on vague guidance for students, such as *suggesting* that students meet with them *sometime soon*, or simply alerting students that the advisor was available as needed. Advisors who laid out clear expectations of when to meet and what to do had better results around those specific engagement strategies. One advisor found that their advisees often referred to these deadlines in their reply communications, and even would apologize for not meeting deadlines if they had missed them. Another advisor linked this theme with an effort to test the effectiveness of an incentive to engage in the FOCUS 2 platform. Instead of just telling students to log in, the advisor laid out specific expectations of creating an account, completing a set number of assessments, and doing so by a set date. Based on this effort, students met these expectations, and these advisees ultimately ended up engaging in the platform in more depth than other students. These results highlight the setting of clear expectations of students as an important component of effective engagement strategy.

Engagement Outside of Email

Throughout many of the team meeting notes, advisors discuss the challenges associated with email engagement. Students do not always check, review and/or respond to email communication, and so engagement strategies that rely solely on email continuously miss the

same group of students. Advisors reported that some of their most meaningful engagements came outside the advising office setting, when they attended campus events and discussed advising with students. In addition, the administrative strategies that rerouted students walking into the advising office to their advisors, and the new Portal alerts both were found to have very positive impacts on student engagement with their advisees. While email drove the majority of advisors' personal outreach plans, the inclusion of a variety of strategies outside of email was noted for its positive impact on students' engagement with their advisors.

Sustained Outreach

A final theme from analyzing the successful strategies came from consistent comments about the value of sustained outreach over the course of the term. In some ways, assessing the cumulative impact of combined advising strategies can be a challenge, in part because advisees might not consistently respond to communication as expected. Advisors each highlight ways that advisees were reaching out to them at different points in the term for assistance, particularly noting the increase in outreach when problems arose for individual advisees. One advisor found that during the intervention, advisees were connecting when they needed support, even when they had been unresponsive during outreach attempts. Even as late as the end of the term, when students had ignored countless outreach efforts, students were reaching out and seeking guidance from the advisor. While these students may not have been included in the advisors' evaluations about a particular engagement strategy because of the delayed response, nonetheless, the sustained engagement with advisees over the course of the term had positive impact on pulling students into the advising program, even if at unexpected times. These "crisis" contacts may be very important to student success and retention.

4.3.1.3 Themes from ineffective strategies

In addition to exploring what worked in the advising intervention, it is equally important to explore what did not work within the intervention, and in particular, what themes emerge from ineffective efforts to engage students. Focusing on efforts that were not successful, the data suggest that an over-reliance on email, and early and late term engagement challenges emerged as points to learn from.

Reliance on Email

Contrasting the effectiveness of having multiple points of engagement, an overreliance on email consistently emerged as a clear point of concern for advisors. While advisors eventually adapted their email practice by increasing the use of personalized and targeted approaches and by providing clear expectations, nonetheless this medium has its limitations. At each team meeting, time was spent brainstorming additional strategies, and advisors frequently discussed other possibilities, such as texting, email templates with pictures, social media, and blackboard announcements. However, these strategies were not as easy to implement, as so while good discussion occurred and advisors clearly desired to use other strategies, in practice, email was typically the default.

Challenges With Early Semester Engagement

While engagement early within the term was an important conceptual component of the intervention model, the first contact with an advisee, especially for new students, can be intimidating. While advisors very quickly attempted new and interesting strategies to try to get students off to the right start, many strategies were not effective at pulling in large proportions of advisees during the first half of the semester. Quantitative data reported prior also supports this

finding, as the majority of recorded contacts came after the midterm point in the semester. In an effort to try new strategies, advisors may have not have been thoughtful about what works in early engagement. During one team meeting, an advisor discussed that inviting students to have a cup of coffee with them in the library during the first few weeks of the term was an unsuccessful new initiative. The team was able to effectively critique the strategy, and concluded that perhaps this particular strategy might have not been well suited for such an early point in the term, but might have worked for follow-up contacts.

In addition, while students clearly understood the value of scheduling for courses, it proved more challenging to articulate the value of early contact to discuss other academic and career goals. With the exception of an advisor who used incentives, no other advisor was able to engage large percentages of students in the college's career development platform, and team meeting discussions suggested that students who were engaging, were not doing so in great depth early on. During a team meeting after the mid-term, advisors spent time discussing this challenge of engaging students in effective conversations regarding their academic and career progress. While some strategies had more impact than others at early points in the term, few early strategies effectively engaged large numbers of students before midterms.

Challenges With Late Term Engagement

In addition to challenges noted early in the term, similar challenges emerged as the semester ended, and in the weeks prior to the Spring term's start. Over the course of the term, advisors began to develop more personalized outreach efforts targeted at students who had yet to engage with them, or who had yet to reenroll in courses. So, late in the semester, new strategies were tested to try to engage with the students who persistently were failing to both make contact with advisors, and who were failing to reenroll for the subsequent term. As a result, highly

personalized strategies were tested to try a new approach for those whom email had failed to reach, but also because the targeting of non-engaged students allowed for a much smaller group of students to apply these time-intensive strategies. While this late push led to a variety of new engagement strategies, such as personalized phone outreach, emails sent to customized lists, and even targeted postcards, the overall feedback on these efforts is that they were too little, too late.

Due to the intensive tracking and monitoring that advisors engaged in throughout the term, they could articulate their own perspectives on advisee engagement very clearly. During discussions at team meetings late in the term, all advisors confirmed that those students who had consistently avoided their contact throughout the term were the ones that were either failing to enroll in the subsequent term, or were the ones who found themselves at risk of academic suspension due to poor grades. While quantitative analyses do not make efforts to explore the correlation between advisor engagement and retention within the scope of this study, nonetheless, this feedback from advisors provides an important perspective on a challenge. Analysis of advisor strategies points to challenges with engagement as the term comes to a close. At the end of the term, while highly personalized efforts to engage students were ineffective, they were targeted at reaching students who were failing to reenroll at the college at such a late point, many of whom never reenrolled. These efforts were most likely too little, too late, as these students may have checked out of the term long before that point.

4.3.2 Effectiveness of implementation strategies

As discussed in previous chapters, sustaining desired organization change is one the key challenges that informed this study and its intended design. As such, the implementation phase of this study incorporated a variety of strategies to both initiate and sustain the types of changes

in advising efforts that might lead to increased student engagement. The process of learning what worked and building upon those successes then was not only applied to improve individual advising practices, but was also part of the larger implementation design and ongoing leadership. Throughout the course of the implementation, notes from advising team meetings and from personal journals were collected, and these data were reviewed to explore these strategies, and to articulate both the successes and the barriers that emerged throughout the implementation process. By reviewing the data and coding responses that suggested a strategy might be working, or that a barrier might exist, data sets were then created as evidence of both successes and barriers. These data were then categorized to summarize which strategies mobilized the intervention, and to articulate key barriers that need addressed for future iterations.

4.3.2.1 Successful strategies

Throughout the implementation process, a variety of strategies stood out as effective in their ability to engage the advising team in the work of the advising pilot program. These strategies included regular team meetings with a specific format, ongoing professional development, individualized ownership by advisors, and administrative nudges to stimulate good practice.

Team Meetings

Regular, bi-weekly team meetings were a component of this implementation from its conception, and served as one of the most powerful mobilizers for change. Every two weeks, the team met for roughly two hours, with the only topic of conversation being the advising pilot program. Each meeting had a similar agenda, which included time for each advisor to report on the work that they had done over the previous two weeks, and to share the results of their

advising efforts to date. The first component of this report gave advisors an opportunity to share the specific strategies that they had implemented in their own practice, and second, each advisor provided a summary report of their own engagement data, by sharing the number of advisees that had contacted them, and later in the term, by sharing the number of their advisees that were registered for the upcoming term.

Meeting time was then spent on open discussions on the strategies being used or considered, on the challenges that advisors were facing, and on the upcoming priorities of the program. Advisors readily engaged in these conversations, and it was evident that the conversations helped others to talk out ideas and strategies. These meetings were often used to brainstorm ideas. During one meeting where the team was focused on the challenge of getting students to engage with the FOCUS 2 platform, one advisor suggested that they could get their advisees to engage if we could just incentivize it. In an effort to encourage this sort of idea generation, I provided a \$25 gift card, and the advisor then used it to develop a campaign to get students engaged in the platform, using the incentive as a lever. This campaign was successful at driving both registrations and in depth usage of the platform, and is an example of a product of the team-based discussion within this meetings.

In addition, from a program leadership perspective, these team meetings provided a clear channel of communication for team members to communicate the challenges they were facing with the intervention model, and specifically, with barriers that existed outside of their direct control. When team members expressed frustration with the lack of responses to email communication, the meeting gave the space to articulate this, and to then generate new ideas about how we might get on student's radar, and the strategy to create an alert on their account was born. This method was monitored through a specific email that was generated when

students replied through the alert, and this tracking categorized these alerts as a very effective strategy. Now that it has been developed, it exists as a very efficient method for future implementations which can easily be brought to scale for all students, and can be utilized during different time periods. Another example of the effectiveness of the meetings is provided in relationship to the work realigning the conversations of the front-line staff who were responsible for assigning appointments and walk-ins. Once the initial protocol was set, advisors routinely used this meeting format to share insights into the effectiveness of these strategies. For example, advisors would report if they were having other team member's advisees placed on their calendar, which was evidence that front-line staff may have veered from the intended protocol. This feedback then helped me to work with the frontline staff to continue to refine their practice, and to respond to the challenges they were facing with the implementation.

Finally, these team meetings provided a form of accountability to the program that would not have otherwise been possible within the academic advising context. With a report due at each team meeting, advisors were responsible for not only summarizing their own work and data, but were also responsible for sharing that within a group context. While at no point was this pilot intervention framed as a competition, this accountability was evident through advisor's comments during these reporting periods. When advisors each shared their reports, it led to one advisor noting, "well, I thought my percentage was great until I heard how everyone else was doing." While this was said in a joking manner, it nonetheless speaks to the potential for meetings like this to encourage accountability.

Professional Development

Another major theme from the implementation was value of the ongoing professional development that was part of the implementation. While this was planned from the onset in the

form of presentations that occurred periodically throughout the semester, it also occurred organically throughout the program as advisors learned from each other, and as the challenges that they were facing were turned into opportunities to learn new ways to approach these challenges. Advisors were provided with a formal presentation on the use of FOCUS 2, and ensuing discussions around this product led to the generation of new strategies for implementation. In addition, at the beginning of the semester, advisors were presented with articles and research on proactive advising, and content from this professional development showed up in advising engagement strategies throughout the term. One example of this was the use of an engagement plan that was shared in this early professional development opportunity, which was then referenced or utilized throughout the term. In addition to being discussed in staff meetings, this ongoing professional development also came via articles about proactive advising that were sent prior to team meetings to generate discussion at ensuing meetings.

While these efforts to develop good practice through professional development had value as noted through team meeting data and journals, perhaps more important was the ongoing, organic development that resulted from the cumulative work around the pilot. Whenever an advisor shared a new strategy, it was often the case that other advisors would ask, “how did you do that?”. Ensuing conversations often occurred, and during meetings, advisors would demonstrate the tools and techniques that they were using. This would even extend beyond the meeting, as advisors coached each other on the best ways to pull reports to monitor advisee progress, to create personalized emails, or to resolve a challenge. These activities were integral to the success of the intervention, and at one meeting, an advisor noted how much more manageable their work became after they learned two new ways to track students in the college’s student information system. At times, advisors used spaces created by the team meeting to share

items that they found while researching strategies as an additional vehicle for continued professional development. One advisor brought a Career Center Intake Interview Form to a meeting to discuss how they were using it to change their advising practice, and to share its benefits with other team members. Each of these elements of professional development, both those that were structured and those that emerged organically, are evidence that lends support for the iterative structure of the implementation and that additionally suggests that changes were occurring as a result of this intervention process.

Individual Ownership

At no point in the implementation of the advising intervention program were advisors told specifically how or when they were to engage with students. Instead, advisors were asked to use the advising intervention model's focus on increasing engagement to develop and test their own engagement strategies. Engaging in the team based iterative design, advisors were then asked to individually report on these strategies, and to improve upon them as the semester progressed. At different points in the implementation, the data outline individual advisor's resistance to this model, as advisors pushed for more direction from me, for clearer expectations, and for a group calendar on how they were to engage. While this feedback had value, giving advisors the space to create their own plans to individually build upon them was an important component of this *pilot* initiative's success. As evidenced through the diversity of strategies developed, by the differences in the types of approaches taken by each advisor, and by the tremendous ongoing development and learning that occurred throughout the duration of the pilot, it was clear that there was value in this more open-ended set of expectations.

In addition to the impact on practice, perhaps the most profound impact was on advisors' ownership of efforts to evaluate their own outcomes. This was evidenced through both advisor

comments, and through the changes in the ways that advisors tracked the engagement of their advisees. As the semester progressed, advisors clearly developed a more individualized perspective on how engaged their advisees were. In response to a question during a team meeting late in the term, an advisor rattled off the current proportion of advisees with contact and their advisees rate of retention without even looking at notes. This was in stark contrast to the beginning of the pilot, when advisors didn't have even a general sense for how many of their advisees that they had met with in prior terms, and no concept of their own advisees' retention rates. This movement towards ownership of the data also connected to an ownership of the advisor's impact on student success. In one meeting, an advisor commented that throughout the intervention, they began "taking ownership over their role in the student experience".

Nudges

Throughout the implementation period, the near constant demand of advisors' work outside of the pilot was often noted for its strain on the initiative. Team meeting conversations frequently were pushed towards work outside the intervention and every advisor at some point in the term did not engage in any intended strategies due to the pressure of additional work outside the pilot. From the onset, I played the dual role of leading the team while actively serving as an advisor within the implementation. From this role, I was also developing new communication, and was engaged in new strategies, and could leverage this to nudge the work of the team. At various points in the term where competing priorities peaked, examples of the type of outreach being used was shared with the team via email. These email templates were intended as a helpful nudge for advisors, and the templates were often either modified or simply cut and pasted by advisors to get out their own outreach. As the implementation evolved, it became evident that even the process of creating new emails for a specific outreach period could become a barrier to

successful outreach if advisors did not appropriately allocate the time for these activities. These templates then provided enough of a start for advisors to then modify the content and push out the communication, and it was continuously noted that engagement by all advisors went up if these templates were sent out.

4.3.2.2 Implementation barriers

While implementation data provided clear evidence of some successes within the implementation process, it also highlighted a variety of challenges that impeded the effectiveness of the implementation. These items are worthy of attention because of their threat to both the longer-term maintenance of the initiative over time and the scalability of this advising model to other groups of students and advisors. Specifically, reviewing team meeting notes and pilot journal data that suggested barriers to the implementation provided evidence of three major challenges to address. These were competing priorities, lack of follow-through and site-specific structural barriers.

Competing Priorities

One of the most consistent themes from literature on organizational change is the challenge of balancing existing priorities with the “extra” work of an initiative (McChesney, Covey and Huling, 2012). This was found to be consistently true for the duration of this intervention as well, and the analysis underscores that individuals struggled to not fall back into their regular practice. Particularly when compared with prior practice, the work around this initial pilot included a significant amount of new, and often unexpected work. Some time could have been expected, such as regular meetings that were only focused on the pilot, time spent with PDSA Plan, Study, Act and Do documentation, and the actual time working with students. In

addition, however, time was spent generating ideas, creating new emails, pulling data, and learning new strategies.

During one team meeting, this challenge became so evident that the invitation for the subsequent meeting included an incentive to coming prepared and staying on task, in that the meeting was promised to only last one hour (instead of two). In addition, I used called out the challenge of staying on top of this change in my email invitation for the upcoming meeting. The ensuing meeting was noted as one of the most productive and efficient, and the team was able to openly discuss the challenges of staying on task. While these efforts and others helped to keep the pilot sustained for the term, the challenges of competing priorities stood out in the analyses as a consistent roadblock to ideal adoption of the intervention. These challenges also provide caution for efforts to scale to advisors that are not part of the central advising team under my supervision, as this ability to manage the day to day will be much less more challenging with this group.

Gaps Between Ideal and Delivered

At the beginning of the term, advisors created a rough outline of the strategies that they hoped to implement throughout the term, and in each meeting, they discussed plans for future meetings. The team meeting notes also evidence that good ideas were frequently generated in this forum, yet, when data on actual efforts made were reviewed, there are clear gaps between the idealized plans and those that were actually put in place for students. This could show up as a missed communication during what an advisor thought was an important time period, or the default to using a generic email over something personalized and targeted. In my own advising practice, this was often the result of the previously noted challenge of competing priorities, but it was also simply a result of poor planning during this initial pilot.

While it is very complex to reduce the external competing priorities for advisors, what was learned through this implementation is that pre-planning engagement activities led to more effective individual efforts. Creating a communication plan for upcoming weeks and adding it onto a calendar as early as possible was a strategy that advisors' began to commit to as the pilot progressed. Advisors articulated the need to hold time on their calendar to pre-draft emails or to make phone calls associated with a particular strategy, or even to hold time to review advisees progress so that they could appropriately target a more specific population. While the data on this implementation period suggested that a major challenge was the gaps between planned and realized activities, the team also recognized this challenge and articulated potential solutions for future iterations.

Structural Barriers

A third consistent finding from the qualitative data was the impact that local practices and structures had on the implementation. This included challenges with advising assignment processes, retention practices, and communication resources to support strategies. Each of these barriers emerged consistently from the data as a barrier to the goals of the pilot, and each are noteworthy for their implications to scalability and for their potential to undermine continued efforts to improve engagement for undecided students. As these are all local challenge relevant primarily to local audiences, these challenges will be discussed broadly and briefly.

Under current practice, advisors are not assigned until after the first week of the term, and advisors routinely commented that this delayed assignment process had a significant impact on early engagement. As advisors could not really initiate engagement until after assignment, there was a clear perception that there were missed windows of time during the week leading up to the term, and during the first week of classes. This resonated with my own advising practice, and is

an example of the type of valuable feedback that was also corroborated through the team meetings.

While the plans for the implementation included the integration of advising and retention activities, specifically the college's early alert system, technical challenges during the implementation derailed these efforts. Consistent with prior practice, advisors were still required to engage in retention alert follow-up for randomly assigned students, but there was no clear method for ensuring that these reports were going to the students assigned advisors. To attempt to remedy, significant administrative efforts were taken by myself to generate lists and to provide advisors with information about their advisees, but these efforts would not be sustainable for larger groups of students, presenting challenges for scalability. To fully realize the potential of the intervention model, advisors would need readily accessible retention data about the students they are working so hard to support.

A consistent challenge throughout the implementation was the limitations of current technology. As advisors search for methods to engage students that remained practical and efficient, many ideas never turned into action due to the lack of technological resources to support the ideas. Advisors routinely commented on the need to engage with students via platforms beyond email, and additional strategies such as texting students were highlighted in research as a best practice. However, upon researching this strategy, there was not sufficient technological resources to engage in texting as a targeted strategy to promote engagement. Similarly, when advisors struggled to effectively share their availability with students to promote efficient appointment scheduling, the current technology limited this approach. Finally, the group identified a need for email communication to be more attractive and concise at the same time, and looked to communications management templates as a possible solution, but ultimately

never was able to move away from generic emails. In each of the these examples, possible technological solutions were identified that, if tested, may be able to increase scalability, but were never realized due to the limits of current technical capacity. When analyzing scalability, more efficient technological tools, and their associated financial implications, should be part of the discussion.

4.3.2.3 Mixed finding on PDSAs

As noted in Chapter 3, the PDSA protocol was included in the implementation as a strategy to encourage advisors to engage in the iterative process, and to routinely engage in cycles of assessment. These documents were intended to be a central component of planning, but in reality, became additional paperwork that advisors did not consistently engage in to the full extent expected. The data set includes PDSA forms completed at irregular intervals for three advisors, and as a cumulative collection of data for the fourth advisor. The PDSA forms were filled in without much detail, and analysis of the documented findings highlights that advisors simply concluded that they had failed to properly estimate how successful a strategy would be, as opposed to speculating why the strategy failed to achieve the expected results. So, if these forms existed simply as additional paperwork, they could be categorized as an implementation barrier. Yet, throughout the course of the implementation, evidence continuously presented itself that suggests that advisors were in fact engaging in the iterative types of processes that these forms were designed to promote.

While the theory behind these forms was being put to good use, there were clear challenges with using the PDSA model within the advising context. First, so many variables factor into engagement with advisors that it was a real challenge to predict results of a particular strategy, yet prediction of results is an important component of the model. Second, using the

PDSA model to track engagement (when engagement was infrequent), made efforts to connect the results of subsequent PDSA iterations quite challenging. Third, advisors found more efficient ways to record strategies and track progress through excel documents or institutional reports, making this tool seem cumbersome. Finally, the results of the PDSA document collection suggests that advisors needed significant additional training on its use in order to effectively utilize it within an implementation. While the concepts of iterative design were instrumental to the success of the pilot program, the PDSA planning tool did not prove as integral to the program as was originally intended.

4.3.3 Advisor perspectives on implementation impact

As a final measure of program effectiveness, analysis of the comments of advisors throughout the implementation provides additional data on the impact of the pilot on their own practice. Specifically, this analysis focuses on how advisors articulate the program's impact on their engagement with students and on their personal advising practice. The protocol at team meetings typically contained a question about the program's impact on advising practice, which provided advisors with space throughout the intervention to address this inquiry question. As many of the previous findings on engagement strategies were also developed utilizing advisor feedback from team meetings, this final analysis focuses specifically on evidence that assesses other changing advising behaviors. Analyzing data drawn from these team meeting notes, two main themes emerge; that advisors were taking great ownership over their role in students' experiences, and that their own advising practice was evolving.

4.3.3.1 Ownership of the advising relationship

One of the most notable themes from advisor statements about their experiences within the implementation of the advising intervention was the increased levels of ownership that advisors were taking within their work engaging their assigned advisees. While previous sections discuss the promotion of individual ownership from a leadership lens, this finding is drawn more specifically from advisors' perspectives on the changes occurring during the intervention. This increased ownership was evidenced by advisor comments in a variety of ways throughout the implementation. In some cases, advisors noted it directly. In response to the question about the program's impact, one advisor commented that they found themselves "taking more ownership over the student experience". In other cases, this ownership was seen less directly. Advisors articulated that they were doing more to engage students intentionally, that they were learning student names, and that they found themselves serving as "an advocate for students" in way that had not been possible prior to the implementation. There was a clear perspective from advisors that they were doing more to reach out to students, but it was also clear they this outreach was more proactive, more personalized, and more impactful than prior, and that advisors were "more purposeful" in their engagement efforts.

As advisors began to more readily track and evaluate the data on their own efforts as the semester progressed, it was evident that advisors became increasingly aware of their own efforts to support their advisees, and the impact that this work was having. Towards the end of the term, advisors each came to consistent conclusions that the students who were not returning or who did very poorly from an academic standpoint were more often those students who had not engaged with them throughout the term. In one meeting, there was a collective acknowledgement of this

ongoing challenge, and the team brainstormed ways to have greater impact in future iterations of this intervention.

4.3.3.2 Evolved practice across all advising

In addition to the increased ownership that advisors felt within the advising experience, advisors also articulated specific changes to ways that they approached their meetings with students, and shared the difficulty in keeping their new practices confined to the pilot (in this case, a good thing). Advisors noted that they felt that their advising conversations were changing within the advising appointments to include more conversations about academic, career and transfer planning, an important focal point of this initiative. During multiple team meetings, advisors used discussion time to focus attention on the types of advising strategies that helped to improve the quality of the conversations occurring with students in advising sessions. Advisor comments provide broad insights into how advisors felt their work was changing. One advisor specifically noted that they were having “a lot more conversations about students’ majors”, and another articulated that “it feels like I am being more effective” in relationship to their advising practices. Other comments provide insights into the ways that advisors felt their work was changing. One advisor noted that they felt their practice had moved from “information sharing” to “driving engagement”, an important shift to a more developmental form of advising aspired to in the intervention model. Another advisor noted that they were becoming more “checklist-oriented during advising sessions”, a comment that underscored the increased intentionality within the content of the advising session. These comments draw attention to the types of improved advising practice that was espoused in the original intervention model, and suggest that throughout the course of the intervention, advisors did begin to develop personal advising practices that more closely orient to the types of practices that can support student success.

While these advisor comments suggest that their work with their assigned, undecided students might have had been more impactful than in previous terms, advisors also clearly articulated that they could not keep these new practices confined to their pilot group. Once advisors found strategies that were helping them to have more effective conversations with students, they readily deployed these strategies within their other advising contacts. As advisors began to assist different groups of students new to the college through their orientation and advising sessions for the Spring term, an advisor noted that their work through the intervention was “changing the way that I work with new students as well”. Advisors also articulated the positive impact that this was having on their advising work with other students, and it was evident through the practices being shared and the comments from the team that the work with undecided students was carry over into other advising work. Without making any particular efforts to push advisors to transition these strategies to other populations, advisors began making these connections, and clearly were identifying the transferrable value of their improved practice. These finding are noteworthy in relationship to the scalability of this work, as these data suggest that this program was not simply a niche effort for a particular group, but rather that it was an effort that developed broadly applicable strategies for improved advising practice.

4.3.4 Summary of qualitative findings

In summary, the qualitative analysis and associated findings provide important insights into the implementation process and outcomes. Analysis highlights that throughout the implementation of the advising intervention, advisor practices were emerging through the iterative processes and stronger advising practice was resulting. Advisors developed and implemented new strategies, but also honed commonly used strategies to increase the impact at

encouraging student engagement. From a leadership lens, the analysis also sheds light on the intervention strategies that effectively mobilized change, and likewise contributed to the development of the intervention, and ultimately contributed to improved student engagement with the program. While these successes were important to explore, the data also highlighted ineffective strategies and implementation barriers that can inform future iterations of the intervention and increase future success. In response to the final inquiry questions regarding advisors' perceptions of the changes in their own practice, analysis found that advisors themselves were articulating increased levels of ownership over their role in the student experience, and the positive effect that their work within the pilot was having on other students that they support.

5.0 DISCUSSION

This study focused on the assessment of an academic advising intervention for undecided students at a community college. The primary purpose of the intervention was to implement strategies and practices that would increase students' engagement with the advising program, while simultaneously improving the quality of those advising contacts to better support student success. The study assesses the impact of this intervention through quantitative data on student engagement, behaviors and outcomes, and through qualitative data from the implementation process. This chapter brings together the results from quantitative analysis and the findings from qualitative inquiry to address the overall effectiveness of the advising intervention model, and to discuss the implications of these findings. Finally, the chapter concludes with a discussion of the future applications of these findings, both for local practice and for broader advising reform at community colleges, and future directions for research.

5.1 EFFECTIVENESS OF THE ADVISING INTERVENTION MODEL

The academic advising intervention model at the center of this study contended that in this local context, for advising to have any impact on students, significant changes were needed in the levels of engagement between academic advisors and their assigned advisees. It further asserted that this increased engagement could then lead to positive student behaviors and

outcomes, and that improved strategies and structures could drive this engagement. This advising intervention model is displayed in Figure 2 below, with the following discussion framed around the assessment of its effectiveness.

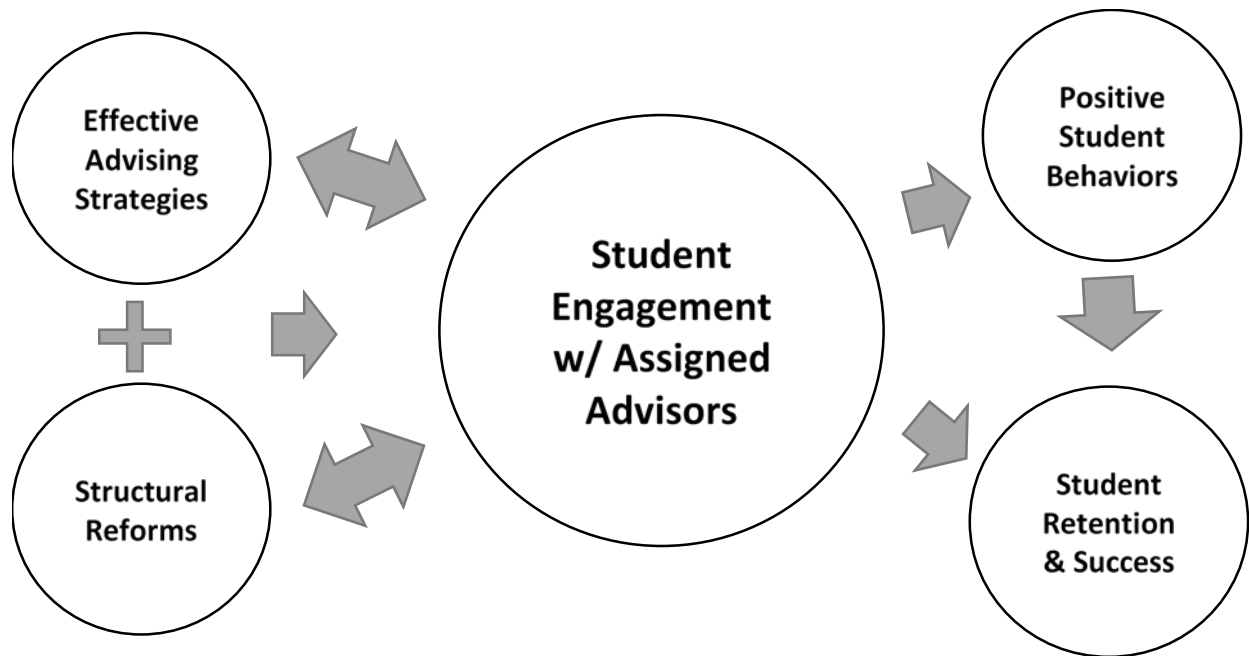


Figure 2. BC3 Advising intervention model

Moving left to right across the model, I first combine Effective Advising Strategies and Structural Reforms to discuss their development, then I will discuss implication for Student Engagement with Assigned Advisors. Finally, I will combine Positive Student Behaviors and Student Retention and Success to discuss the impact of engagement on these positive outcomes.

5.1.1 Advising strategies and structural reforms

One of the purposes of studying the implementation process was to explore the strategies and structures that were developed and delivered through the iterative design processes, and to analyze their impact on student engagement. The combined analysis of the quantitative and qualitative data support the conclusion that advisors did in fact engage in new efforts during the

implementation process and that the strategies and structures put in place were having a positive impact on engagement. In addition, the analyses highlight that advisors made significant changes to their own practices during the implementation, and that their strategies and practices evolved throughout the course of the intervention process. Advisors individually engaged in a variety of new strategies, and through discussions at ongoing meetings the larger advising team was able to learn from these efforts and evolve their practice as the term progressed. While advisors relied heavily on email as the primary platform for outreach, effective nuances within this approach emerged. Advisors found that personalized communication with clear expectations made a difference in student engagement, and that as the term progressed, they were able to become increasingly targeted in their communications to students.

The types of outreach engaged in by advisors closely mirrors the strategies and tactics outlined in proactive advising literature (Varney, 2013), and highlights that advisors were in fact adopting the more intrusive advising style advocated by community college advising theory (CSSE, 2012; Karp, 2013). Supporting this proactive outreach, advisors' increased ownership of data on their own contact with advisees led to better engagement efforts, and to more explicit learning about what was working and what was not. What advisors learned throughout the term can be looped back in to influence engagements early in the term, and so future iterations of this intervention might look very different than this first pilot, and might also have a more powerful impact on engagement.

In addition to the positive findings on advisors' individual strategies, it noteworthy that the implementation also gave attention to the broader structures that influence the effectiveness of individual efforts. The opportunity for the team to regularly meet and focus attention on the work of the pilot provided a forum for both new ideas to be generated and for barriers to the

implementation to be uncovered. Through these meetings some of the most effective individual and group-led initiatives were developed and put into place. In addition, these processes clearly identified potential barriers, such as gaps in advisor knowledge and challenges with front-line clerical staff conversations, both of which were then immediately addressed with professional development for both advisors and for the front-line clerical team. As a result, not only did individual advisor behaviors change throughout the implementation, but the structures supporting the advising program also improved.

A final conclusion from analysis of advisor data is that in addition to changing strategies and engaging openly in intervention related activities, analyses showed that advisors were clearly changing the way they were engaging with students, and were changing their approaches to advising even outside the work of the pilot intervention. This serves as another positive assessment of the implementation, as it suggests that the implementation did not consist simply of superficial efforts to produce new outreach, but that advisors day-to-day work was changing as a result of the learning and development within the pilot itself. In particular, advisors' comments that they could not contain the changes to the undecided population speak to both value advisors had for the changes in practice and the potential for this work to be scaled to additional populations of students.

Assessment efforts then conclude that throughout the intervention, advisors did change both their outreach and their advising practices, and the larger support systems for advisors also began to adjust to meet the demands of this new advising model. Consistent with the intervention model, advisors developed better strategies by paying attention to what was working, leading to improved practice. The advising intervention model then resulted in a more proactive form of academic advising, with advisors engaging with students in more

developmental ways, and with iterative learning leading to improved strategy. In theory, as the advising outreach and delivery was improved, an improvement in student engagement was predicted to likely follow.

5.1.2 Student engagement with assigned advisors

Good academic advising for community college students involves the development of an ongoing relationship between an academic advisor and an advisee and attention to the academic and career development of the individual student (Karp, 2013). This all starts with connecting the advisor and advisee, and as such, increasing the levels of engagement between academic advisors and their assigned advisees was of paramount importance to this study, and was the driving focus of the intervention efforts. Across all measures, analyses reveal positive increases in student engagement with their advisor. Quantitative analyses outlined significant differences between the average contacts per advisee when compared with the control cohort, as well as highlighting significant, positive differences between the proportions of the undecided cohort that engaged with an advisor between cohort years. This conclusion is also supported across the qualitative findings, as analyses revealed more connection between advisors and advisees, as evidenced both through ongoing data shared during team meetings and through advisors' perspectives on the intervention.

The clear increase in contact is important because of the placement of advising engagement at the center of the intervention model. Strategic, one-on-one support for undecided students is essential to effective advising for this population (Karp, 2013), and without changes in the levels of engagement, it would be illogical to expect that other significant outcomes would result from the intervention. Throughout all points of the study term, students were more likely

to engage with their assigned advisees during this intervention, giving advisors an opportunity to deploy better advising techniques, and to build the types of relationships espoused by community college advising theory (see Karp and Stacey, 2013).

5.1.2.1 Impact on new students

While data and analysis across the entire cohort showed positive changes in engagement, perhaps the greatest impact of the intervention model was seen with new students. Results from the analysis of the intervention were consistently more positive for new students, a conclusion which is important for two reasons. First, because early experiences are important, and positive initial advising experiences could open doors for more productive advising relationship over a student entire college experience. Once this relationship with the advisor is established in the first semester, it should become much less challenging for both the student and the advisor to continue and build upon this work in subsequent terms. Second, this impact on new students is noteworthy because it provides focus for advisors in future iterations of this implementation. Targeting students in an effort to more strategically deploy limited advising resources is essential for community colleges (Karp and Stacey, 2013), and if new students are more likely to engage, advisors could focus their most personalized and time intensive efforts on this population in an effort to maximize impact. Again, if advisors can leverage these strategies to continue to improve upon the levels of engagement for new students, this could then translate into positive impacts as the students matriculate beyond the first term.

5.1.2.2 Preference for late term engagement

In addition to the exploration of impact on new students, the analysis of advising contacts also highlighted a trend in later term engagement. Proactive advising strategies

advocate for sustained contact through key points in the term and highlights the early term as specifically important (Varney, 2013). For undecided students, early career conversations are also important to improving student's sense of direction at the institution (Karp, 2013). The intervention model focused on efforts to attempt to drive contact both early in the term to discuss academic, career and transfer goals, and later in the term to discuss course scheduling, but the data clearly show that students were more likely to engage later in the term. In past advising practice, the primary driver for student engagement with the advising office was the need to schedule for classes for the upcoming term, and trend that drove engagement after the midpoint in the term. It is particularly noteworthy then that results for late term engagement were both positive and significant, as this is a real indicator of change.

While it was evident that more students engaged in the second half of the term, early term engagement results were still significant, a very important result. As early engagement was so dismal in the prior term, this was an important point of focus, particularly for career based conversations, and thus the significant changes in early engagement is a positive assessment of the intervention. While later term engagement was clearly emerged as more prevalent, the implementation strategies allowed data to emerge that will reinforce early contact in future iterations. New strategies were developed, such as changing advising assignment timelines, to more effectively encourage early term contacts, and so future iterations should improve upon this original design, and future data collection efforts should closely monitor gaps in early and later term engagement.

5.1.3 Student behaviors, retention and success

The final component of the advising intervention model focused on student behaviors and on retention and measures of success. The use of academic advising as a strategy to push students to completion drew from the theory that improved advising can have a positive influence on the student behaviors that lead to this success (Bailey, Jagers and Jenkins, 2015; Karp, 2013). The advising model was developed under this theory, and assessment efforts focused on how student behaviors and outcomes changed as a result of the improvements in advising practice. Analyses highlighted mixed findings on student enrollment behaviors, and positive impacts on career development behaviors. Additionally, no statistically significant impacts were found on measures of student GPA and course completion, but positive trends are discussed for their implications for continued study.

5.1.3.1 Student behaviors

Assessment efforts focused on analyzing the intervention's impact on both enrollment and career development behaviors. Results from analyses on enrollment behaviors were mixed, and unanticipated changes in institutional practice further confound the interpretation of findings. Important lessons were learned regarding the use of enrollment data in causal comparative design, as in addition to the shifts in institutional registration timelines, differences in retention rates between the two terms also had the potential to skew enrollment findings. The assessment of career development behaviors was more positive, and usage of the career development platform increased, as did the rates at which students declared a major.

Increases in positive behaviors support the effectiveness of the advising intervention model at encouraging career development, providing evidence that the advising program is more

closely aligning with the types of aspirational practice outlined in the literature (see Karp and Stacey, 2013). Increasing the career content within advising conversations is a cornerstone of success for undecided students (Karp, 2013), and the model encouraged greater engagement with the career development platform, and also showed that those contacting an advisor were more likely to engage with FOCUS 2. This connection between engagement with advisors and career development activities supports the design of the intervention model, and supports the premise that driving engagement with an improved advising program can, in turn, have a positive influence on student behaviors. While this is a positive assessment of the model, continued improvement will be necessary to reach more students with this career-embedded advising. Challenges with engagement early in the term may have kept this intervention from reaching its full potential in this area, and while significant increases in career development behaviors were documented, large proportions of the undecided cohort did not engage in the types of career activities that were assessed within this study.

5.1.3.2 Student success and retention

The final outcomes included within this assessment were lagging indicators of student GPA, course completion and retention to the second term. These three measures of student success are critical to the national narrative on student success and completion, but are also the most challenging to assess in relationship to this initiative. Of principal importance are the implications for student retention, as students cannot effectively persist to completion without matriculating into the second semester. While a comparison of retention into the second semester for new students within the study cohort outlined a 10.2 percentage point increase in realized retention when compared to the prior control year (78.6% compared to 68.4%), this difference did not reach the level of statistical significance. Measures of term GPA and rates of

successful course completion were included to provide additional perspectives on the cohort that improve discussion of the retention variable. In the case of both of these findings, no statistically significant differences were found between the study and comparison group.

While these results do not reach the threshold for significance dictated by this study, there are practical significances that can be drawn from both the increase in actual rate of retention and from the simultaneous maintenance of student GPA and course completion rates. First, retention serves as a lagging indicator of success within this study, and the impact of these efforts may not have been realized within the time period studied. As such, the increase is certainly a very positive trend to be studied as students continue to progress. Second, as first term retention also serves as a leading indicator of student completion, the positive increases in retention might also lead to positive increases in this longer-term measure of student success. Finally, from a quality perspective, it is important for increases in retention to not be paired with simultaneous decreases in student achievement (Bean and Hossler, 1990). The increases in student retention paired with the consistency in student GPA and course completion rates suggest that students of similar academic merit were retained. An increase in the retention of successful students then suggests that this intervention is in fact working to support the larger goals of the institution, and that future data collections might shed additional light on the full impact of this work on longer term goals for student success and completion.

In addition to these conclusions, analysis from qualitative data highlighted that students who were not retained were often the ones who never engaged with advisors throughout the term. This could mean that those who engaged were more likely to stay, but it could also point to the possibility that this intervention was less effective at reaching the students who did not persist. The benefit of advising is limited to students who engage with it, and so this finding

highlights the need to continue to push for broader engagement, with increased focus on finding ways to specifically target and attract those students least likely to be retained.

5.2 IMPLICATIONS FOR PRACTICE

The study of the advising intervention model and its implementation at BC3 has implications beyond the interest in assessing its ability to encourage more effective advising practices and increased engagement. Specifically, this research represents the successful incorporation of advising theory into local practice, and has implications for both local practice and for community college advising practice more broadly. In addition, the successful application of improvement science as a mechanism to motivate, develop, and sustain change through iterative strategy has implications for advising leadership, and for broader community college reform efforts.

5.2.1 Implications for local practice

The advising intervention model utilized within this study provided an opportunity to integrate broad theory with local practice through the use of iterative strategies designed to test and expand upon what worked in this context. As a result of these structured iterations, a detailed understanding of the context for local advising practice emerged, allowing for the development of more effective strategies while simultaneously reducing the impact of implementation barriers. In addition, this in-depth analysis of the local context informs both future policy development and the scale-up of advising improvement efforts. Implications for

this discovery of what works in local context and those policy and scalability implications are discussed below.

5.2.1.1 What works in this context?

For academic advising reforms, or any reforms, to be effective, this study highlights the importance of understanding and integrating local context. At BC3, it was clear that because advisors were not engaging with assigned advisees, advising could not improve unless engagement between advisors and advisees increased. While changes in advising were aimed at larger goals of improving student success and completion, reform efforts could not ignore local context, and so this study outlines how a clear focus on what is needed in this local context can begin to mobilize a program forward. In addition to developing an intervention that was custom made for this local context, the advising intervention model also continuously gave attention to successes and barriers within this context, and created spaces to build upon these successes and to work through these barriers. Instead of developing an intervention and hoping that it worked, these strategies allowed the intervention itself to emerge within this local context, and also allowed advisors to gradually increase their ownership of the intervention and its outcomes. While the assessment of this intervention highlighted a variety of successes, perhaps the most important implication was the accumulated knowledge gained throughout the entire semester's implementation, as this knowledge can then be quickly leveraged into a more effective advising intervention iteration for the incoming cohort of undecided students.

5.2.1.2 Policy implications

Advising policies play an important role in guiding the work of any advising program, and literature on advising often emphasizes the need for mandated supports (Karp, 2013).

Throughout the intervention, individuals inquiring about the process would often ask why I didn't simply mandate advising for undecided students. While such a policy might have a place in the future, the results of this pilot suggest that such a policy might not have the impact desired. Analyses of qualitative data suggested that those advisees that did not engage with advising were often those who did not return, meaning a barrier to return (in the form of a mandate for advising) might have no impact on this group. Analysis of implementation data also showed that advisors often relied heavily on email early in the term and only resorted to more intrusive and personalized engagement types later in the term. If students who do not return disengage early in the semester, then these more intentional strategies may have been too little, too late. So, while a restrictive policy may not have an impact on continuing to push more of the cohort to engage with the advising program, pushing the effective and personalized strategies to earlier points in the term might inspire earlier contact, and give all students an important institutional contact as they navigate through the term. The emergence of this in-depth understanding of the local context has significant implications for future policy development, and also provides benchmarks for analyzing the future impact of such policy decisions.

5.2.1.3 Scalability

The advising intervention model was developed as a pilot iteration that is intended to inform efforts to improve advising across the institution, the findings from this study have significant implications for discussions of scalability. Many of the effective strategies that were developed throughout the pilot could easily be implemented across larger groups of students. Portal alerts, email outreach, and targeting strategies can all be brought to scale without significant concern. Noting the impact of proactive strategies and the lessons learned from successes, one important implication for scalability is the need to make information as accessible

as possible for advisors. Due to the significant pull of other day to day responsibilities, anything that makes the creation of outreach or the tracking of students more efficient has the potential to aid in the success of the initiative, and anything that become cumbersome could likewise thwart it. Developing and sharing outreach calendars, email templates, or mail merge – ready documents could improve advisors’ efforts, and creating an advisor dashboard with relevant data on their students could help advisors to replicate both the targeted approaches and the individualized ownership observed within the pilot.

Throughout the course of the implementation, a variety of barriers were also identified that could impede these larger reform efforts, and the work of the pilot helped to both identify and remedy these challenges. In this way, running a tightly controlled pilot iteration provided an opportunity to pave the way for a larger scale adoption by studying and clearing would-be hurdles before they impeded a larger scale implementation. While the implementation strategies themselves would be challenging to incorporate with larger, more diffused teams, they played an important role in developing what might be a more effective intervention model for different advisor and advisee populations. It is noted that many of the leadership strategies deployed to manage the change efforts and to keep the implementation on track involved high levels of direct contact between myself and the advising team; conditions that will be difficult to replicate with off campus and faculty advisors. With this challenge, new strategies would be needed to create something similar to the community of practice that was evident among the professional advising team throughout this pilot implementation.

Finally, an important discussion point for scalability is the advising loads assigned for the duration of this intervention. While advisors saw large numbers of students outside the implementation, they were only assigned roughly 35 undecided students. This allowed for a very

specific focus on these students, and allowed the ownership of data on these students to be manageable for the duration for the duration of the pilot. Two specific points on advisee loads are noteworthy for scalability. First, there was evidence that this sort of intrusive engagement was a challenge to keep up with, and yet large numbers of the undecided student population still failed to meet with their advisor, and many did not meet with their advisors at multiple points in the term as the intervention attempted to encourage. If more students begin to engage in future iterations, it will become increasingly important to monitor the impact on advisor's ability to keep up with this demand, as it is possible that the current staffing model could not actually support continually increasing levels of engagement. Second, if this model is to be scaled to additional advisors and/or students, identifying effective assignment loads for these new advisor groups would be an important challenge. Driving up engagement rates for faculty advisors with over 100 students might actually begin to create conditions where advisors become overwhelmed and serve student less effectively than in prior years, so monitoring these loads will be essential.

5.2.2 Implications for academic advising

As advisors look to theory to improve their own practice, evidence of the effective integration of this theory into local practice has value. During the implementation, advisors drew from literature on effective advising strategies both individually and through group-based professional development activities. Advisors specifically focused on using proactive strategies (Varney, 2013) to encourage sustained and personalized outreach throughout the term (Karp and Stacey, 2013) and focused on the inclusion of career related conversations early and often (Karp, 2013). While advisors may not have adopted these practices in full from day-one of the implementation, findings from the duration of the implementation suggest that advisors did adopt

strategies consistent with this research, and as the term progressed, began to more fully integrate improved advising strategies. At the conclusion of this semester, advisors articulated that the strategies that were most effective were those that were personalized and targeted, and that sustained outreach had a positive impact on student engagement with them. Evidence from the number and type of initiatives that advisors engaged in also points to clear indications that advisors were more proactive and intrusive in their outreach efforts, particularly as the term progressed. This suggests both that advisors were engaging in the types of strategies espoused by the literature, and, that these strategies did in fact have a positive influence on student engagement with the advising program.

These connections to theory and practice provide important implications for those attempting to improve advising programs. First, the consistency with intended design and the positive increases in student engagement suggest that these more theoretical concepts can be applied to local advising practice, and that their application does have a positive impact on engagement. While the results of this study highlight the value for local advising practice at BC3, they also lend to the larger body of evidence that these types of strategies can be components of improved academic advising design. However, a second important discussion point is the delayed integration of these strategies. While advisors were engaged in professional development that exposed them to the theoretical concepts within proactive advising, many of these strategies were more fully adopted after individual members of the team attempted them and found success, rather than directly from this theoretical design. This again reinforces the need of effective implementation strategies, as advisors appeared to draw more from group learning than from the theory alone. This combination of professional development and group-based learning was essential for the implementation within this local context, and may be a

valuable finding for implementations within other contexts as well. This then suggests that proactive advising can improve engagement, and that advisors might more fully develop this proactive approach when team based iterative learning is present.

5.2.3 Implications for leadership

In addition to being a study about academic advising, this is also a study about leadership. Throughout the literature, consistent themes emerge that call for significant and fundamental change in community college culture and practice, and yet just as consistently, they highlight the challenge of motivating positive change in educational contexts. Improvement science methods have the potential to bridge the gap between idealized and realized reform, yet little research has been done regarding their effectiveness within either the community college or academic advising context. Across all measures and methods, it is clear that the implementation strategies were an essential component of the intervention's success, and this finding has real implications for academic advising leadership, and for community college leadership more broadly. In addition, the assessment methodology was developed in a way that prioritized readily available data and resources, which provides those leading advising programs with possible templates for assessing the value of their reform efforts.

5.2.3.1 Improvement science

Throughout the course of this implementation, a variety of specific leadership strategies were adopted to sustain this implementation over the course of the term and to build the capacity to bring these advising improvements to scale for the larger student population. Referencing the findings from the data collected throughout the implementation, one of the most impactful

strategies implemented throughout this process was the regular team meetings that focused exclusively on the intervention. This is an important finding, in particular, because of how regular a practice staff meetings are in education. Through these meetings new ideas and strategies emerged, barriers were identified and addressed, individual ownership was cemented and accountability was established. In addition, the regular team meetings provided the space for me to make this organization improvement work a priority for the team, and a priority for myself. These meetings also created a space for professional development to occur, and for unplanned professional development to emerge. Simply by modifying an already prevalent leadership structure to create space for iterative processes made a significant difference in the outcomes of this effort to change advising practice.

In addition to team meetings, PDSA strategies helped to cement to iterative process. While these documents were utilized by advisors, at times they seemed to be viewed as a barrier to the implementation due to the work involved, and possibly due to advisors' lack of training on how to use the forms. Improvement science (Lanley, et al, 2009) was a focal point of the implementation processes, with PDSA cycles attempted at routine intervals in the process. While the biweekly cycling worked quite well for team meetings and for the updates that occurred in this process, it proved less effective for the PDSA plans.

While PDSA models were an important component of the conceptualized intervention model and proposed implementation, in practice, they were challenge to utilize in this specific context for increasing academic advising engagement. This may have been because of a lack of effective professional develop to teach advisors how to utilize the document, or because competing priorities made this sort of planning seem superficial to the actual work of the pilot. In reflecting upon this challenge, and upon my own experience within the pilot as an advisor, it

is also possible that the short iteration cycles simply did not overlay neatly onto this type of intervention. While the group clearly rallied around the need to build semester-to-semester improvement plans, the changing nature of advising engagement at various points in the term led to challenges predicting outcomes and making good sense of results. In addition, while this strategy was attempted for this pilot, efforts to scale this beyond the professional advising team would be quite challenging. Based on the experience within this pilot, if individuals do not own the value of the PDSA style planning model, it could become an extra task within the intervention as opposed to a crucial component of it. More specific work with PDSA document in a higher education or academic advising setting would be needed to effectively assess the specific application and utility of this approach.

5.2.3.2 Developing effective (and efficient) assessment

The effective assessment of efforts to improve advising or to improve colleges more broadly is essential to professional practice (Troxel, 2008). However, spending more time on the assessment of an intervention than on the intervention itself could challenge the long-term sustainability of any assessment plan. Efforts to effectively assess programs and practices with readily available data then have significant value for those at the helm of efforts to bring about positive change within their organization. This study provides example of effective methodologies for practitioners, as data are drawn primarily from readily accessible sources for institutional administrators. Quantitative data were collected through routine institutional reports, much of which was also readily accessible for individual advisors throughout the course of the implementation. Qualitative data were also gathered through regular business processes by recording notes from team meetings, collecting planning documents, and through journaling of experiences.

5.3 IMPLICATIONS FOR FUTURE RESEARCH

Incorporating iterative design into program development and implementation, in many ways, draws attention to the need for the near constant assessment of future intervention iterations within this local context, and gaps in current findings provide opportunities for additional research. In addition, conclusions from this study also outline the need for additional research on the application of improvement science methods in higher education and specific to my own work, within the context of academic advising reform.

5.3.1 Local research

As the entry point for larger efforts to improve academic advising at BC3, significant opportunities exist for future research on the topic. While data on engagement for this iteration were promising, there were still large numbers of students who were not reached by the intervention, leaving room for continued improvement. As is noted regularly throughout this dissertation, future iterations have the potential to produce even more effective results based on the knowledge gained throughout the implementation process, and so the similar study of these subsequent iterations will provide the evidence needed to continue to understand the effectiveness of the model and the associated advising strategies.

In addition, of particular note is the need to continue to explore the impact of enhanced advising as students matriculate beyond the first term. While this study looks at only Fall to Spring retention, additional data and analyses could help to shed light on the impact of this advising intervention model on both measures of engagement and outcomes as students move into their second year. The work of Bailey, Jaggars and Jenkins (2015), points to improved

advising as a lever for improved rates of student completion, and additional longitudinal data collection would be needed to more directly associate the work of this pilot with that longer range student outcome.

Finally, this study does not make specific efforts to link student engagement with retention, yet advisor comments suggested that they found consistency in the fact that students who were not retained were also not engaged. As future iterations of this advising intervention pushes advisors to work to shrink the number of students who do not engage with the advising program, additional analyses on the correlations between student engagement and retention could more fully inform the connection between these two variables.

5.3.2 Academic advising research

While the major conclusions of this study suggest the applicability of advising theory at driving engagement, there is still a lack of research, particularly within the community college context, which directly connects these theories for academic advising reform to the larger goals of improved student outcomes. In the absence of a link to these desired outcomes, colleges will continue to weigh the need to commit limited financial resources to academic advising programs over other possible efforts to improve. Research that attempts to correlate engagement with advising programs and retention, or to link changes in advising to additional changes in student outcomes will add significant emphasis on the need to improve advising for all students. In addition, longitudinal studies which monitor the value of advising in relationship to longer term measures of success, such as transfer or completion, would have additional value. Due to the need to provide so much deference to local context, additional studies which attempt to connect broader advising theories with local community college practice also have value in making the

findings more generalizable. Similarly, studies which extend to different community college types would also have value to the broader field of community college advisors or administrators.

This study also highlights the need for additional research on the application of improvement science principles to community college reform efforts. Specifically, research that applies this theory at scale for larger academic advising initiatives would have value for the field, as would additional research on the adoption of these principles more broadly in any higher education context.

5.4 CONCLUSION

This dissertation in practice opens with the following quote: *Change is difficult. The current system pulls innovative changes toward more familiar ground like a giant magnet. What begins as a large change can result in only a small adjustment.* (Langley, et al, 2009, p. 93). The changes as a result of this implementation were in fact challenging both from a leadership and advisor viewpoint, and evidence of the organizational “magnet” opposing change was apparent throughout the implementation. Even though the team articulated tremendous value for the work being done, the pull of other day to day responsibilities emerged as one of the most significant barriers to implementation success. Countering the persistent pull, the implementation strategies that were utilized helped to reinforce the priority of this change and to cultivate the sense of individual ownership and accountability that ultimately contributed to its success. Consistent with the design of the implementation, this intervention also provided the space to test advising

and leadership strategies, to learn from those efforts, and to build this learning into future iterations.

This study outlined the value of incorporating advising theory into local practice for undecided students, and highlighted the positive impact that this new advising model had on student engagement and career development behaviors. From a leadership lens, this process of allowing the implementation to emerge throughout the term, as opposed to a process of simply developing a ready-made set of plans, greatly increased the success of the initiative. Ongoing, structured opportunities to assess and realign practices allowed the intervention to adapt as the term progressed, and from my own perspective, to better meet the needs of both students and advisors. In addition, it should be restated that this effort was a first pilot at improving academic advising at BC3, and this experience is certain to enhance the continued work to improve advising for all students. Even as the pilot finished, advisors were able to articulate clear strategies that might greatly improve the work of the next iteration, and so the work to improve academic advising within this local context continues!

APPENDIX A

Sample Staff Meeting Protocol

Meeting Attendees:

- 1. What personal strategies have you attempted over the last two-week period to engage advisees?**
 - a. What have the results been in relationship to your engagement with advisees?
 - b. What did you learn from these results?
 - i. Where they different from what you expected?
 - ii. What is working?
 - iii. What did not work as well?
- 2. What strategies will you attempt to utilize for the next two-week period?**
 - a. What do you expect will happen?
- 3. Have the organizational changes produced any noticeable impacts?**
 - a. Connections to advisees from other means?
 - i. Referral from walk-in traffic?
 - ii. Announcements through the Portal?
 - iii. Connections through retention alerts or midterm reports?
 - b. Strategies that worked?
 - c. Strategies that could be improved upon or added?
 - d. Have you noticed any reoccurring barriers to your efforts to engage students?
- 4. Let's focus on individual appointments. Describe your typical conversations with your advisees?**
 - a. Have your career, academic and transfer planning conversations with students been different this semester?
 - i. In what way?
 - ii. What advising strategies have contributed to this difference?
- 5. Future planning**
 - a. What strategies should we implement to test next?
 - b. What improvements do we need to make to current practices?

APPENDIX B

PDSA Improvement Model

I. Plan

- ▶ *What is the goal? What is the actual plan? What do you think will happen? (Write it down) How will you know if the plan worked?*

II. Do

- ▶ *Carry out the plan. What worked well? What did not go as expected?*

III. Study

- ▶ *Review the data. How did results differ from expectations? Summarize what was learned.*

IV. Act

- ▶ *Determine what changes to make for the future.*

Figure 3. PDSA improvement model

APPENDIX C

Advisor Consent Form

This letter is intended to inform you that in conjunction with my dissertation efforts, I will be evaluating the implementation and impact of the undecided academic advising pilot program being conducted throughout the Fall 2016 semester. As part of this study, data will be collected during advising team meetings to attempt to understand the strategies being deployed by individual advisors, and how those strategies might impact students' engagement with you as their assigned advisors. In addition, advising team meeting notes will be used to understand your perspectives on the impact of our collective efforts to improve student advising, specifically focusing on the strategies that had a positive impact and on your perceptions of barriers that may have negatively impacted the program's efforts.

Data in the form of meeting notes will be collected, and any program planning documents (Plan, Do, Study and Act forms or Communication Plans) will be requested to more fully explore what strategies were utilized, and how successful those strategies might have been at engaging students. Meetings will be utilized to gain a better understanding of the advisor perspective on this change, the impact that it is having on your own practice, and the perceptions you have of program strengths and barriers.

This data will be reported in a publicly available dissertation, but will include only un-identified information to protect your privacy. However, because of our small group, and because of the explicit inclusion of BC3 as the study site, it is possible that strategies or perceptions could be linked back to you. The risks of such linkage do not exceed those that would normally be included in efforts to share best practices with advising peers, but you should be aware of this possibility.

Your participation in this data collection effort is voluntary, and there will be no negative repercussions should you decline participation at any point in the study. While your participation as an academic advisor is part of your role within the college, should you choose not to participate in this study, data affiliated with your efforts will not be used in the final report.

If you feel that you fully understand these risks, and that you voluntarily agree to your inclusion in this evaluation, please indicate this informed consent by signing below.
Thank you for your consideration of this request.

Full Name (Please Print)

Signature

For questions or additional information, please contact Josh Novak at joshua.novak@bc3.edu

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